

DEPARTMENT OF TRANSPORTATION  
**SURFACE TRANSPORTATION**

CONTRACT NO. 97697

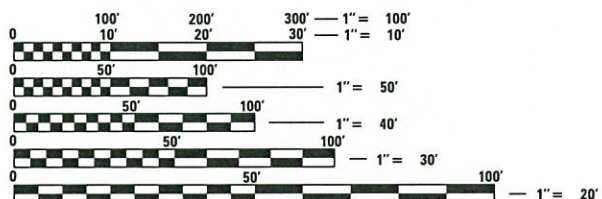
TR RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	1
		ILLINOIS	CONTRACT NO. 97697	

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- 32-39. CROSS SECTIONS

**DESIGN CLASSIFICATION**

MINOR COLLECTOR (NON-URBAN) ADT = 400 - 750  
 EXISTING ADT = 475 (2015)  
 DESIGN ADT = 625 (2038)  
 DESIGN SPEED = 50 MPH



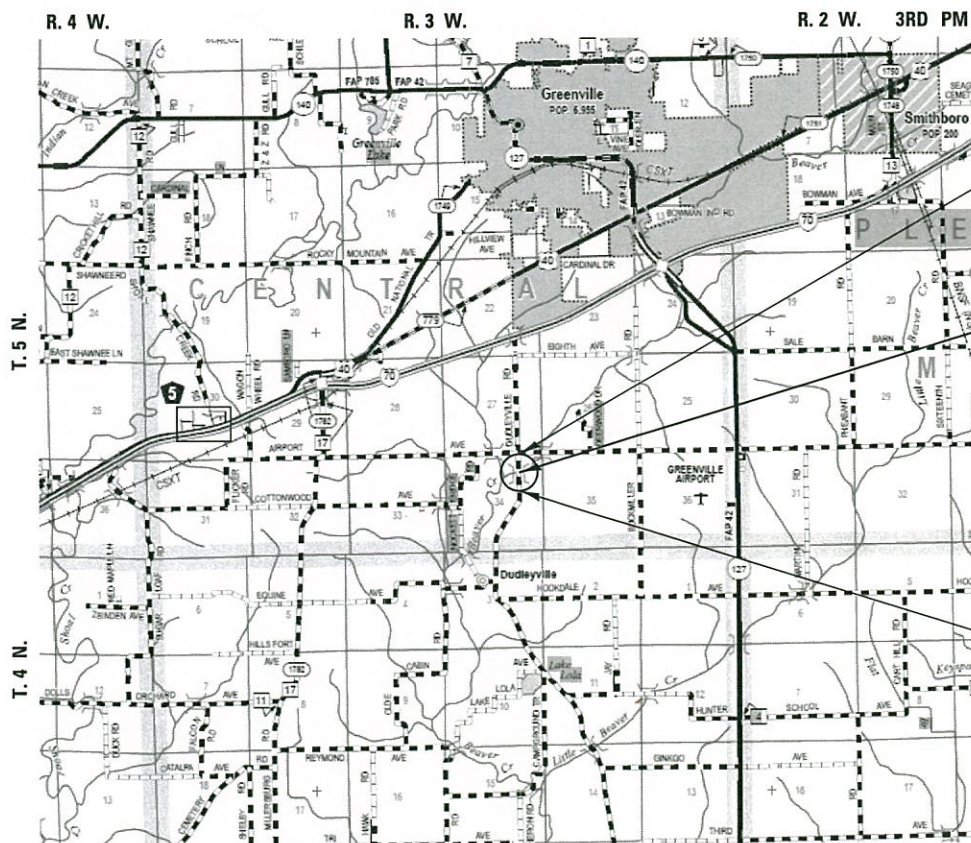
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
 JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
 1-800-892-0123  
 OR 811

PREPARED BY:  
**HMG**  
 Engineers • Surveyors

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 OF THE STATE OF ILLINOIS

**DETAIL PLANS FOR**  
**TR 156 (DUDLEYVILLE ROAD)**  
**OVER BEAVER CREEK**  
**SECTION 08-02201-00-BR**  
**PROJECT NO. DW88(561)**  
**BOND COUNTY**  
**CENTRAL ROAD DISTRICT**  
**JOB NO. C-98-304-16**



**LOCATION MAP**  
 GROSS LENGTH = 1,270 FT. = 0.241 MILE  
 NET LENGTH = 1,270 FT. = 0.241 MILE

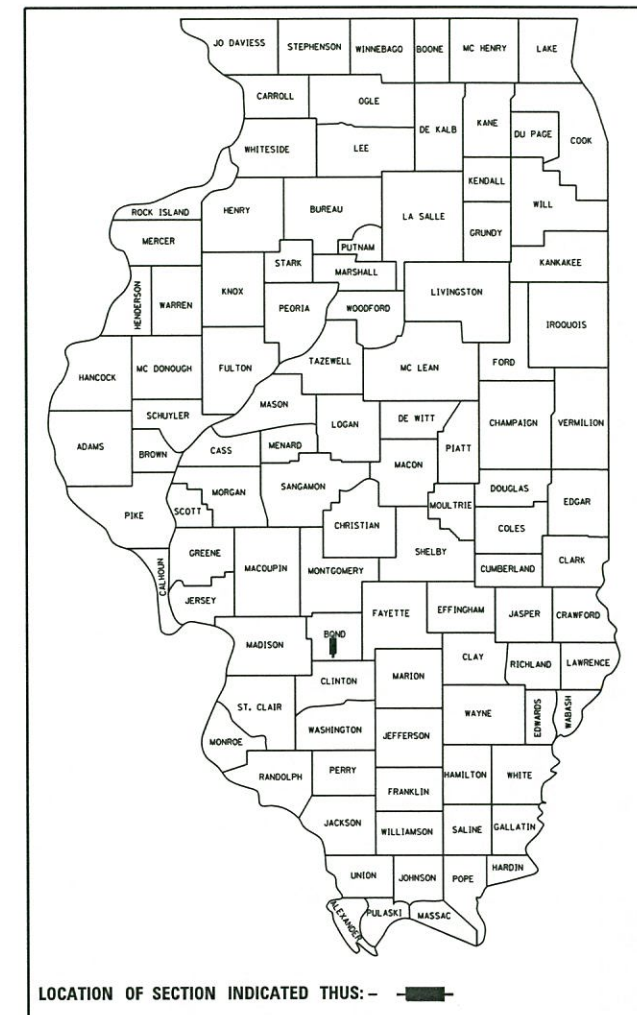


SECTION 08-02201-00-BR  
 END STA 25+20

**PROJECT LOCATION**

EXISTING STRUCTURE NO. 003-3209  
 PROPOSED STRUCTURE NO. 003-3223  
 STATION 15+39.00  
 THREE SPAN, PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" & 21" DEPTH) ON SPILL THRU PILE BENT ABUTMENTS & PILE SUPPORTED PIERS MEASURING 185'-0" BACK TO BACK OF ABUTMENTS WITH A 30'-0" CLEAR ROADWAY WIDTH AT A 10° RIGHT AHEAD SKEW.

SECTION 08-02201-00-BR  
 BEGINS STA 12+50



STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED	<i>[Signature]</i> 20 19 ROAD COMMISSIONER
APPROVED	<i>[Signature]</i> 20 19 BOND COUNTY ENGINEER
PASSED	<i>[Signature]</i> 20 19 DISTRICT 8 ENGINEER OF LOCAL ROADS AND STREETS
RELEASING FOR BID BASED UPON LIMITED REVIEW	<i>[Signature]</i> 20 19 REGION FIVE ENGINEER

*[Signature]* DATE: 3/15/19  
 LARRY D. GOWLER JR., P.E.  
 REGISTERED PROFESSIONAL  
 ENGINEER IN ILLINOIS, NO. 062-052900  
 EXPIRES: NOVEMBER 30, 2019



GENERAL NOTES

- ALL ELEVATIONS IN THE PLANS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY HAVE BEEN CAUSED BY THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL EXISTING UNDERGROUND UTILITIES. THE APPROXIMATE LOCATIONS OF THE KNOWN UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST INFORMATION AVAILABLE AT THE TIME OF DESIGN.
- THE CONTRACTOR SHALL GIVE AT LEAST TWO WEEKS NOTICE BEFORE BEGINNING CONSTRUCTION SO THE ENGINEER MAY GIVE ADEQUATE NOTICE TO ALL EMERGENCY, SCHOOL AND POSTAL SERVICES.
- THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL AND PROTECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING POSITIVE DRAINAGE IN THE DISTURBED AREAS, TO THE SATISFACTION OF THE ENGINEER. ANY GRADING SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EARTH EXCAVATION, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- IF ASH TREES ARE REMOVED ON THE PROJECT, THE CONTRACTOR SHALL BECOME FAMILIAR WITH AND COMPLY WITH MEASURES SPECIFIED BY THE ILLINOIS DEPARTMENT OF AGRICULTURE (IDOA) TO PREVENT THE SPREAD OF THE EMERALD ASH BORER. THE IDOA INFORMATION FOR ASH TREE REMOVAL CAN BE FOUND ON THE IDOA WEBSITE AT WWW.AGR.STATE.IL.US/EAB.
- GRADING SHALL BE DONE BY HAND AROUND LIGHT POLES, UTILITY POLES, SIGN POSTS, SHRUBS, TREES OR OTHER NATURAL OR MAN-MADE OBJECTS WHERE FILLS OR CUTS ARE ADJACENT TO THESE ITEMS. IT IS THE INTENT THAT THE LIMITS OF CONSTRUCTION BE SUCH AS TO PRESERVE, IN THE ORIGINAL STATE, AS MUCH AREA AS POSSIBLE. THE DECISION AS TO ITEMS TO REMAIN IN PLACE SHALL BE DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE CONTRACT UNIT PRICE FOR EARTH EXCAVATION, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- ALL ENTRANCES WITHIN THE PROJECT LIMITS SHALL REMAIN ACCESSIBLE, AS DIRECTED BY THE ENGINEER, THROUGHOUT THE TIME OF CONSTRUCTION.
- TREE REMOVAL OPERATIONS SHALL BE CONDUCTED BETWEEN OCTOBER 1 AND MARCH 31.
- AGGREGATE BASE COURSE SHALL BE PROOF ROLLED TO SATISFACTION OF ENGINEER.
- THE EXISTING ROADBED SHALL BE BROKEN UP TO THE SATISFACTION OF THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE CONTRACT UNIT PRICE FOR EARTH EXCAVATION, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE FOLLOWING APPLICATION RATES HAVE BEEN USED IN THE CALCULATION OF THE PLAN QUANTITIES:  

AGGREGATE (BASE & SURFACE)	2.05 TONS/CY
RIPRAP	1.6 TONS/CY
TEMPORARY DITCH CHECKS	11 FT/DITCH CHECK
AGGREGATE DITCH CHECKS	8 TONS/DITCH CHECK
TEMPORARY EROSION CONTROL SEEDING	2 APPLICATIONS OVER SEEDING AREA
HOT-MIX ASPHALT	2.016 TONS/CY = 112 LBS/SY/IN

HIGHWAY STANDARDS

STD_NO	STD TITLE
000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
542011-02	CONCRETE END SECTIONS FOR ELLIPTICAL PIPE CULVERTS 15" (375 MM) THRU 72" (1800 MM) EQUIVALENT DIAMETER
542311-07	TRAVERSABLE PIPE GRATE FOR CONCRETE END SECTION
542411	SLOPED METAL END SECTIONS FOR PIPE CULVERTS 15" (375 MM) THRU 60" (1500 MM) DIAMETER
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631032-09	TRAFFIC BARRIER TERMINAL, TYPE 6A
701901-08	TRAFFIC CONTROL DEVICES
725001-01	OBJECT AND TERMINAL MARKERS
782006	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
BLR 22-7	TYP. APPL. OF T.C.D. FOR RURAL LOC. HWYS. (2-LANE 2 WAY RURAL TRAFF.) (RD. CLOSED TO THRU TRAFF.)
BLR 24-2	MAILBOX TURNOUT FOR LOCAL ROADS

COMMITMENTS

THE COUNTY HAS MADE THE FOLLOWING COMMITMENTS FOR THE PROJECT. COMMITMENTS ARE NOT TO BE ALTERED WITHOUT THE WRITTEN APPROVAL OF ALL PARTIES TO WHICH THE COMMITMENT WAS MADE. THE FOLLOWING IS A GENERAL SUMMARY AND DOES NOT CONTAIN FULL DETAILS. THE CONTRACTOR SHALL ADHERE TO THESE CONDITIONS.

- A TREE CLEARING RESTRICTION IS PRESENT BETWEEN APRIL 1 AND SEPTEMBER 30 DUE TO POTENTIAL ENDANGERED BAT HABITATS.

KNOWN UTILITY COMPANIES

COMMUNICATIONS

AT&T  
 SPRINGFIELD, IL. 62670  
 (217) 789-8771

ELECTRIC

SOUTHWESTERN ELECTRIC CO-OP  
 HIGHLAND, IL. 62249  
 (618) 664-1025

GAS

AMEREN ILLINOIS  
 BELLEVILLE, IL. 62221  
 (618) 236-8905  
 ATTN: ERICA SYKUT  
 (618) 920-2497

WATER

BOND MADISON WATER COMPANY  
 POCAHONTAS, IL. 62275  
 (618) 669-2861  
 ATTN: SANDY KUHN

SPECIAL REQUIREMENTS REGARDING WORK AROUND AMEREN'S DOT GAS TRANSMISSION LINE

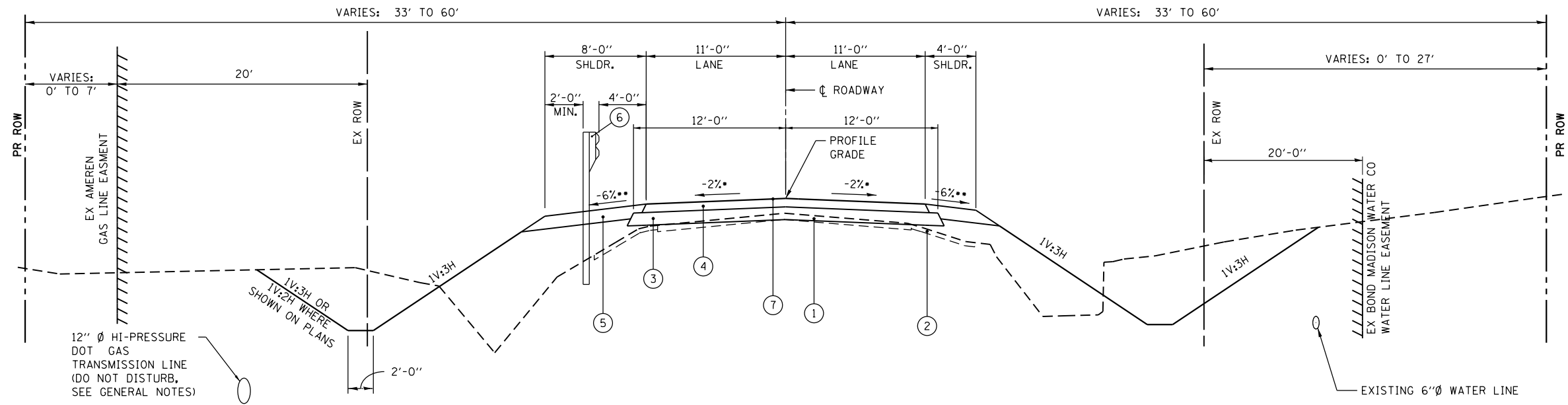
- NO ASPECT OF THIS PROJECT SHALL REMOVE PERMANENT COVER OVER THE PIPELINE SUCH THAT THERE IS LESS THAN 36" OF SOIL COVER OVER THE PIPELINE.
- THERE SHALL BE A MINIMUM OF 12" OF SEPARATION BETWEEN THE GAS PIPELINE AND ANY OTHER FACILITY OR STRUCTURE.
- PROPOSED FACILITY CONSTRUCTION EQUIPMENT SHALL NOT DRIVE ACROSS GAS MAIN, WITHOUT ADEQUATE SOIL COVER/PROTECTION.
  - THE PIPELINE HAS ONLY BEEN EVALUATED FOR STANDARD AASHTO TRAFFIC LOADING, NOT FOR CONSTRUCTION LOADS. IF THE CONTRACTOR PLANS TO DRIVE EQUIPMENT OVER THE PIPELINE, HE SHOULD EITHER PROVIDE DETAILED LOAD INFORMATION TO AMEREN'S FIELD ENGINEER (ERICA SYKUT, PH. (618) 920-2497) FOR ANALYSIS OR HAVE AN OUTSIDE ENGINEER REVIEW HIS LOADINGS TO PREVENT DAMAGE TO THE PIPE.
  - CONSIDER INSTALLING STEEL PLATES OR WOOD MATTING ABOVE UNPROTECTED GAS MAIN.
- ANY EXCAVATION EXPOSING THE GAS MAIN MUST BE BACKFILLED WITH CLEAN SOIL OR SAND WITHIN 12" OF THE GAS FACILITY TO PREVENT COATING DAMAGE. ROCK BACKFILL IS NOT ACCEPTABLE.
  - ANY EXCAVATION WITHIN 15 FT. OF THE GAS MAIN WILL BE MONITORED BY AMEREN PERSONNEL.
  - NO MORE THAN 22 FT. OF 12" GAS MAIN SHOULD BE EXPOSED AT A TIME, UNLESS SUPPORTED TO PREVENT GAS AND ADDITIONAL STRESS.
- GAS EASEMENT REQUIRES ACCESSIBILITY FOR FUTURE MAINTENANCE WORK.
- CONTRACTOR SHALL ADHERE TO J.U.L.I.E. LOCATE LAWS WHILE WORKING NEAR GAS MAIN.
- BEFORE REMOVING STUMPS IN CLOSE PROXIMITY TO AMEREN'S EASEMENT, AS DETERMINED BY AMEREN, A TRENCH SHALL BE CUT BETWEEN THE STUMPS AND THE PIPELINE WHILE UNDER THE GUIDANCE AND SUPERVISION OF AMEREN. THE TRENCH SHALL BE MADE WITH A TRENCHER THAT WILL EXTEND TO A DEPTH OF AT LEAST 1 FT. BELOW THE INVERT OF THE PIPELINE AND BE CAPABLE OF CUTTING TREE ROOTS. STUMP REMOVAL MAY BE DONE AFTER THIS WORK IS COMPLETE. COST FOR THIS WORK SHALL BE INCLUDED IN THE COST FOR TREE REMOVAL.

FILE NAME = H:\6184\CADD_Sheets\6184_Sht_02_Gennote.dgn	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL NOTES, HIGHWAY STANDARDS AND COMMITMENTS</b>	TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>HMG</b> ENGINEERS, INC. 9360 HOLY CROSS LANE BREESE, ILLINOIS 62230 (618) 526-9611	DRAWN -	REVISED -			156	08-02201-00-BR	BOND	39	2	CONTRACT NO. 97697
USER NAME = k1eux	CHECKED -	REVISED -			SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.		ILLINOIS FED. AID PROJECT			
PLOT SCALE = 48.0000' / in.	DATE -	REVISED -								
PLOT DATE = 3/15/2019										

SPEC. PROV. SPECIALTY ITEM	CODE NO.	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	20
	20100500	TREE REMOVAL, ACRES	ACRE	0.1
	20200100	EARTH EXCAVATION	CU YD	1,100
*	20300100	CHANNEL EXCAVATION	CU YD	1,360
*	20400800	FURNISHED EXCAVATION	CU YD	3,175
*	20800150	TRENCH BACKFILL	CU YD	52
	25000100	SEEDING, CLASS 1	ACRE	0.25
	25000200	SEEDING, CLASS 2	ACRE	1.25
	25000400	NITROGEN FERTILIZER NUTRIENT	POUND	135
	25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	135
	25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	135
	25100115	MULCH, METHOD 2	ACRE	1.00
	25100635	HEAVY DUTY EROSION CONTROL BLANKET	SQ YD	1,746
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	300
	28000305	TEMPORARY DITCH CHECKS	FOOT	143
	28000315	AGGREGATE DITCH CHECKS	TON	32
	28000400	PERIMETER EROSION BARRIER	FOOT	2,220
	28000500	INLET AND PIPE PROTECTION	EACH	6
	35100100	AGGREGATE BASE COURSE, TYPE A	TON	1,629
	40200100	AGGREGATE SURFACE COURSE, TYPE A	TON	47
	40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	70
	48100100	AGGREGATE SHOULDERS, TYPE A	TON	462
	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
	50105220	PIPE CULVERT REMOVAL	FOOT	170
	50200100	STRUCTURE EXCAVATION	CU YD	90
	50300225	CONCRETE STRUCTURES	CU YD	64.5
	50300280	CONCRETE ENCASEMENT	CU YD	21.9
	50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	3,141
	50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	2,364
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	19,360
*	50901050	STEEL RAILING, TYPE SM	FOOT	370
	51200959	FURNISHING METAL SHELL PILES 14" X 0.312"	FOOT	940
	51202305	DRIVING PILES	FOOT	940
	51203200	TEST PILE METAL SHELLS	EACH	4
	51204650	PILE SHOES	EACH	24

SPEC. PROV. SPECIALTY ITEM	CODE NO.	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
	51500100	NAME PLATES	EACH	1
	54260315	TRAVERSABLE PIPE GRATE FOR CONCRETE END SECTION	FOOT	55
*	54260418	SLOPED METAL END SECTION, STANDARD 542411, 18", 1:4	EACH	2
*	54260424	SLOPED METAL END SECTION, STANDARD 542411, 24", 1:4	EACH	4
*	54260630	SLOPED METAL END SECTION WITH GRATE, STANDARD 542411, 30", 1:4	EACH	2
*	54263348	CONCRETE END SECTION, STANDARD 542011, 48", 1:3	EACH	4
	542A5503	PIPE CULVERTS, CLASS A, TYPE 1 EQUIVALENT ROUND-SIZE 48"	FOOT	72
*	542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	32
*	542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	70
*	542D0235	PIPE CULVERTS, CLASS D, TYPE 1 30"	FOOT	36
	58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	612
	58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	1,653
	59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	28.6
*	63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
*	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
	67100100	MOBILIZATION	L SUM	1
*	72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
*	78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	8
*	78200011	BARRIER WALL REFLECTORS, TYPE C	EACH	6
*	Z0075496	CONCRETE RETAINING WALL REMOVAL	FOOT	125
*	X0320050	CONSTRUCTION LAYOUT (SPECIAL)	L SUM	1
*	X2810808	STONE DUMPED RIPRAP, CLASS A4 (SPECIAL)	TON	22
Δ	Z0076600	TRAINEES	Hour	500
*	X2810810	STONE DUMPED RIPRAP, CLASS A5 (SPECIAL)	TON	858
Δ	Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	Hour	500
*	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1

Δ 0042



**NOTES:**

GUARDRAIL MAY BE LOCATED ON ONE SIDE, BOTH SIDES OR NEITHER SIDE. ADDITIONALLY, THE FORESLOPES TRANSITION FROM 1V:3H TO 1V:2H AT THE BACK OF THE ABUTMENTS WHILE BEHIND GUARDRAIL. SEE PLAN AND PROFILE SHEET FOR EXACT LOCATIONS.

SHOULDER WIDTHS WILL TYPICALLY BE 4'-0", BUT WILL VARY FROM 4'-0" TO 8'-0" NEAR THE GUARDRAIL. SEE PLAN AND PROFILE SHEET FOR LIMITS OF SHOULDER WIDTH TRANSITIONS.

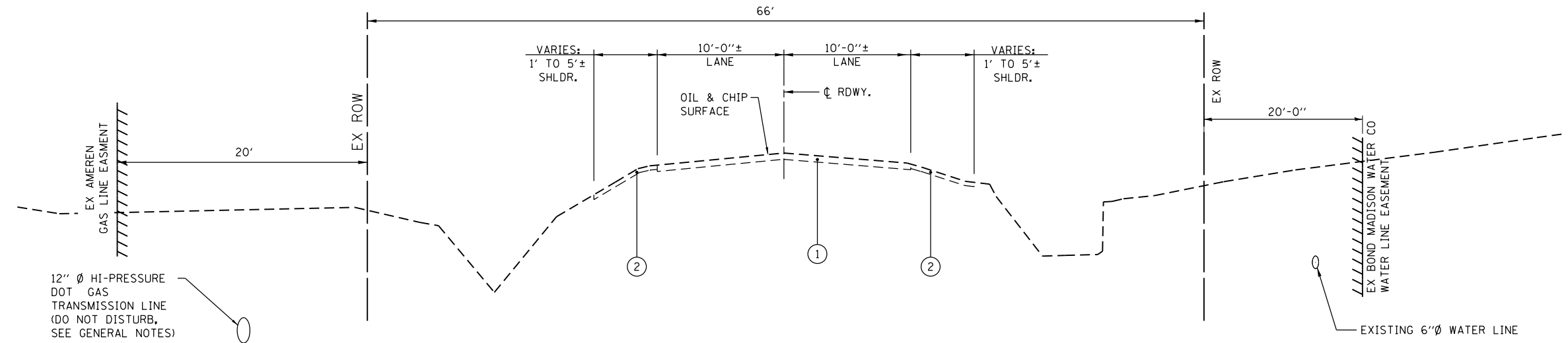
**PROPOSED ROADWAY CROSS SECTION**

12+50 TO 14+46.50  
16+31.50 TO 25+20

- TRANSITION FROM ROAD TO BRIDGE CROSS-SLOPE IN 10'±.
- TRANSITION FROM SHOULDER TO BRIDGE CROSS-SLOPE IN 40'±.

**LEGEND**

- ① EXISTING ROADWAY (6"± AGGREGATE BASE AND BITUMINOUS SURFACE TREATMENT)
- ② EXISTING SHOULDER (EARTH/AGGREGATE)
- ③ AGGREGATE BASE COURSE, TYPE A, BASE LAYER, 6" CA-2 (9" AT BACK OF ABUTMENT PER ARTICLE 351.07)
- ④ AGGREGATE BASE COURSE, TYPE A, TOP LAYER, 4" CA-6
- ⑤ AGGREGATE SHOULDERS, TYPE A (6")
- ⑥ GUARDRAIL/TRAFFIC BARRIER TERMINAL
- ⑦ A-3 BITUMINOUS SURFACE TREATMENT, 22' WIDE (BY OTHERS)



**EXISTING ROADWAY CROSS SECTION**

12+50 TO 25+20

FILE NAME = H:\6184\CADD_Sheets\6184_Sht_04_TypicalRdwy.dgn	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TYPICAL ROADWAY SECTIONS</b>		TR	SECTION	COUNTY	TOTAL	SHEET
USER NAME = k.laux	DRAWN -	REVISED -				156	08-02201-00-BR	BOND	39	4
PLOT SCALE = 10,000' / in.	CHECKED -	REVISED -		CONTRACT NO. 97697						
PLOT DATE = 3/15/2019	DATE -	REVISED -		SCALE:	SHEET 1 OF 1 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT			

**EARTHWORK SCHEDULE**

LOCATION	A	B	C	D	E = C - D
	CHANNEL EXCAVATION	EARTH EXCAVATION	EXCAVATION ADJUSTED FOR SHRINKAGE/LOSS	REQUIRED FILL	BALANCE: WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD
<b>DUDLEYVILLE ROAD</b>					
STA 12+50.00 TO STA 14+46.50		446.0	334.5	233.0	101.5
STA 14+46.50 TO STA 16+31.50 BRIDGE	1,360.0		765.0		765.0
STA 16+31.50 TO STA 25+20.00		651.0	488.3	4,530.0	-4,041.8
<b>TOTAL</b>	<b>1,360.0</b>	<b>1,097.0</b>	<b>1,587.8</b>	<b>4,763.0</b>	<b>-3,175.3</b>
<b>USE</b>	<b>1,360</b>	<b>1,100</b>	<b>1,590</b>	<b>4,765</b>	<b>-3,175</b>

**NOTES:**  
 QUANTITIES ESTIMATED FROM COMPARISON OF THE EXISTING SURFACE MODEL TO THE PROPOSED SURFACE MODEL.  
 SCHEDULE ASSUMES A 25% SHRINKAGE/LOSS FACTOR FOR EARTH EXCAVATION.  
 SCHEDULE ASSUMES 25% WASTE FOR CHANNEL EXCAVATION.  
 COLUMN "A" - CUT MATERIAL FROM THE CHANNEL (CHANNEL EXCAVATION)  
 COLUMN "B" - CUT MATERIAL OUTSIDE THE CHANNEL (EARTH EXCAVATION)  
 COLUMN "C" - CUT MATERIAL ADJUSTED FOR SHRINKAGE/LOSS AND IS SUITABLE FOR EMBANKMENT (NOT A PAY ITEM)  
 COLUMN "D" - REQUIRED FILL MATERIAL (NOT A PAY ITEM)  
 COLUMN "E" - BALANCE OF ADJUSTED CUT MATERIAL AND FILL MATERIAL (FURNISHED EXCAVATION)

**HMA MIXTURE REQUIREMENTS**

ROUTE	TR 156
SECTION	08-02201-00-BR
COUNTY	BOND
CONTRACT	97697

DESCRIPTION: DUDLEYVILLE RD. OVER BEAVER CREEK

20 YR. ESAL'S: 0.07

MIXTURE USE	SURFACE
APPLICATION	HMA SC "C" N50
AC/PG	PG 64-22
RAP % (MAX)	SEE SP. PROV.
DESIGN AIR VOIDS	4.0% @ Ndes=50
MIX COMPOSITION	IL 9.5
(GRADATION MIXTURE)	
FRICTION AGG	MIXTURE C

**TREE REMOVAL SCHEDULE**

LOCATION	TREE REMOVAL ACRES	TREE REMOVAL (6 TO 15 UNITS DIAMETER)
STATION	ACRE	UNIT
STA 12+80.00 33' RT		6
STA 13+25.00 29' RT		6
STA 13+25.00 38' RT		8
STA 14+50.00 RT TO STA 15+90.00 RT	0.11	
<b>TOTAL</b>	<b>0.11</b>	<b>20</b>
<b>USE</b>	<b>0.1</b>	<b>20</b>

**EROSION CONTROL AND SEEDING SCHEDULE**

LOCATION	SEEDING, CLASS 1	SEEDING, CLASS 2	NITROGEN FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	MULCH, METHOD 2	HEAVY DUTY EROSION CONTROL BLANKET	TEMPORARY EROSION CONTROL SEEDING	TEMPORARY DITCH CHECKS	AGGREGATE DITCH CHECKS	PERIMETER EROSION BARRIER	INLET AND PIPE PROTECTION	STONE DUMPED RIPRAP, CLASS A4 (SPECIAL)
STATION	ACRE	ACRE	POUND	POUND	POUND	ACRE	SQ YD	POUND	FOOT	TON	FOOT	EACH	TON
STA 12+50.00 LT TO STA 14+72.00 LT		0.14	12.8	12.8	12.8	0.11	169.2	28.4	22.0	8.0	104.6		
STA 12+50.00 RT TO STA 14+94.00 RT	0.15		13.8	13.8	13.8	0.13	118.3	30.7	11.0	8.0	323.2	2	
STA 15+04.00 LT TO STA 25+20.00 LT		0.64	57.8	57.8	57.8	0.49	725.1	128.4	55.0	8.0	912.7	1	11.3
STA 15+24.00 RT TO STA 25+20.00 RT		0.36	32.8	32.8	32.8	0.21	733.1	72.9	55.0	8.0	878.9	3	10.1
<b>TOTAL</b>	<b>0.15</b>	<b>1.15</b>	<b>117.1</b>	<b>117.1</b>	<b>117.1</b>	<b>0.94</b>	<b>1745.8</b>	<b>260.3</b>	<b>143.0</b>	<b>32.0</b>	<b>2219.4</b>	<b>6</b>	<b>21.4</b>
<b>USE</b>	<b>0.25</b>	<b>1.25</b>	<b>135</b>	<b>135</b>	<b>135</b>	<b>1</b>	<b>1746</b>	<b>300</b>	<b>143</b>	<b>32</b>	<b>2220</b>	<b>6</b>	<b>22</b>

**GUARDRAIL SCHEDULE**

LOCATION						TRAFFIC BARRIER TERMINAL, TYPE 6A	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	TERMINAL MARKER-DIRECT APPLIED	GUARDRAIL REFLECTORS, TYPE A	BARRIER WALL REFLECTORS, TYPE C
STATION						EACH	EACH	EACH	EACH	EACH
STA	13+50.11	LT	TO	STA	14+43.86	1	1	1	2	
STA	13+55.39	RT	TO	STA	14+49.14	1	1	1	2	
STA	14+46.50		TO	STA	16+31.50	BRIDGE				6
STA	16+28.86	LT	TO	STA	17+22.61	1	1	1	2	
STA	16+34.14	RT	TO	STA	17+27.89	1	1	1	2	
TOTAL						4	4	4	8	6
USE						4	4	4	8	6

**MISC. SCHEDULE**

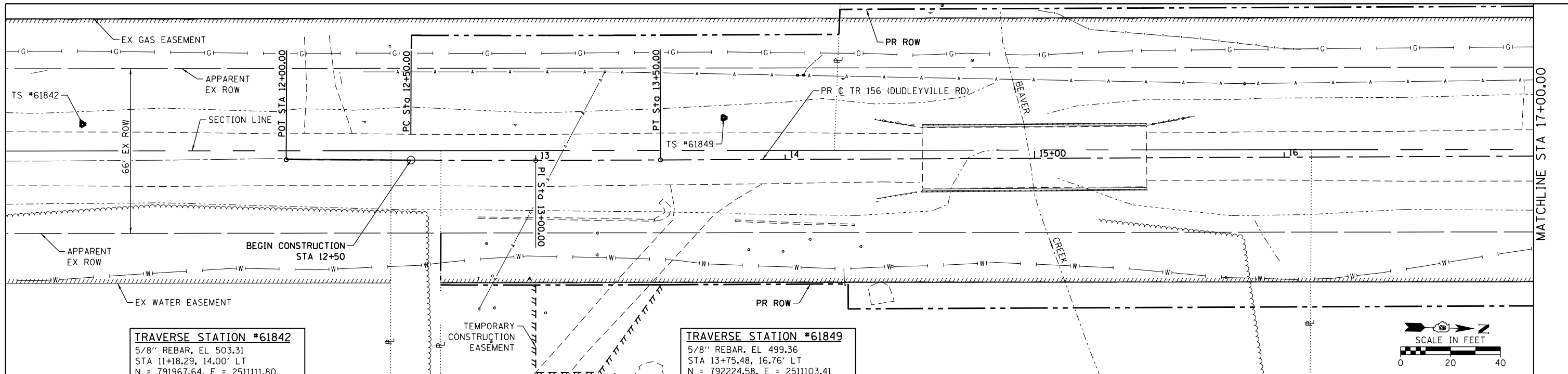
LOCATION						CONCRETE RETAINING WALL REMOVAL
STATION						FOOT
STA	12+76	RT	TO	STA	13+53	77
STA	13+80	RT	TO	STA	14+28	48
TOTAL						125.0
USE						125

**PAVING SCHEDULE**

LOCATION				AGGREGATE BASE COURSE, TYPE A		AGGREGATE SURFACE COURSE, TYPE A	AGGREGATE SHOULDERS, TYPE A
STATION				TON		TON	TON
				BASE LAYER 6" CA-2	TOP LAYER 4" CA-6		
<u>DUDLEYVILLE ROAD</u>							
STA	12+50.00	TO	STA	14+46.50	185.6	112.3	106.1
STA	16+31.50	TO	STA	25+20.00	827.3	503.8	355.7
<u>_ENTRANCES</u>							
STA	13+15.00	RT	PE			46.5	
TOTAL				1012.9	616.1	46.5	461.8
USE				1,629	47	462	

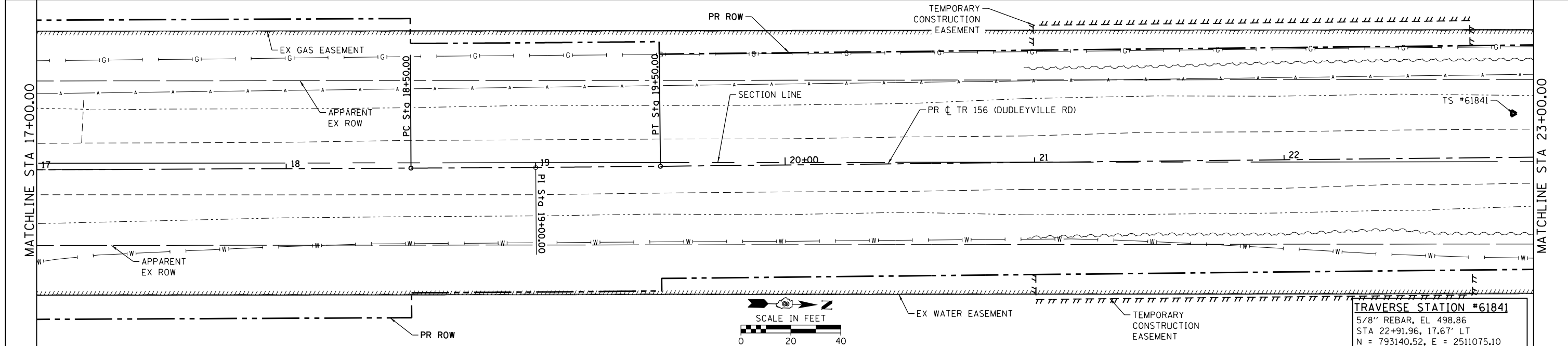
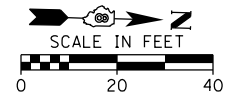
**PIPE CULVERT SCHEDULE**

LOCATION				TRENCH BACKFILL	PIPE CULVERT REMOVAL	PIPE CULVERTS, CLASS A, TYPE 1 EQUIVALENT ROUND-SIZE 48"	PIPE CULVERTS, CLASS D, TYPE 1 18"	PIPE CULVERTS, CLASS D, TYPE 1 24"	PIPE CULVERTS, CLASS D, TYPE 1 30"	SLOPED METAL END SECTION, STANDARD 542411, 18", 1:4	SLOPED METAL END SECTION, STANDARD 542411, 24", 1:4	SLOPED METAL END SECTION WITH GRATE, STANDARD 542411, 30", 1:4	CONCRETE END SECTION, STANDARD 542011, 48", 1:3	TRAVERSABLE PIPE GRATE FOR CONCRETE END SECTION
STATION				CU YD	FOOT	FOOT	FOOT	FOOT	FOOT	EACH	EACH	EACH	EACH	FOOT
ENTRANCE	OFFSET	INV EL	OFFSET	INV EL										
/LOCATION														
12+63.0	RT	STA 12+45.00	19.80'	499.20	TO	STA 12+81.76	23.52'	498.46		2				
13+15.0	RT	STA 12+95.07	24.20'	498.20	TO	STA 13+35.81	28.03'	497.38	32.00		2			
13+66.0	RT	Old Drive												
14+44.0	RT	Wingwall												
15+59.0	RT	Wingwall												
17+07.0	LT	Old Drive												
21+35.0	AR	STA 21+35.00	32.75'	LT 495.54	TO	STA 21+35.00	32.75'	RT 495.64	25.60				2	27.4
21+43.1	AR	STA 21+43.10	32.75'	LT 495.57	TO	STA 21+43.10	32.75'	RT 495.67	25.60				2	27.4
22+50.0	LT	STA 22+25.05	30.92'	496.00	TO	STA 22+74.02	29.50'	496.39		36.00		2		
22+50.0	RT	STA 22+26.69	30.90'	496.01	TO	STA 22+73.68	30.10'	496.19	20.00		38.00	2		
TOTAL				51.19	170.00	72.00	32.00	70.00	36.00	2	4	2	4	54.8
USE				52	170	72	32	70	36	2	4	2	4	55

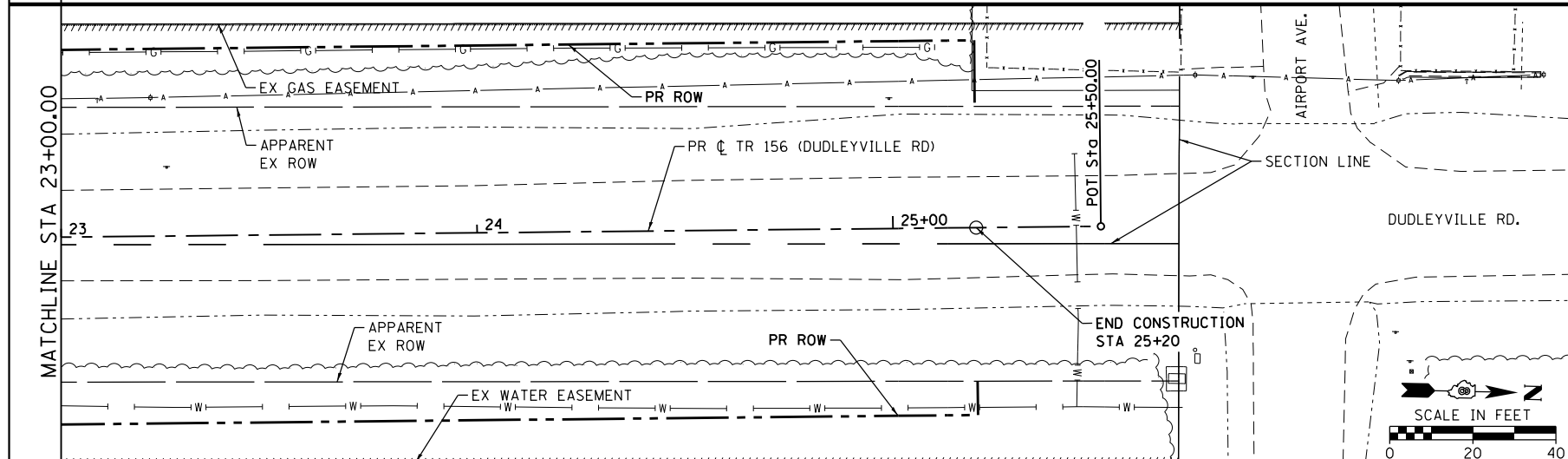


**TRAVERSE STATION #61842**  
 5/8" REBAR, EL 503.31  
 STA 11+18.29, 14.00' LT  
 N = 791967.64, E = 251111.80

**TRAVERSE STATION #61849**  
 5/8" REBAR, EL 499.36  
 STA 13+75.48, 16.76' LT  
 N = 792224.58, E = 2511103.41



**TRAVERSE STATION #61841**  
 5/8" REBAR, EL 498.86  
 STA 22+91.96, 17.67' LT  
 N = 793140.52, E = 2511075.10



**PROP. CURVE PRCL-1**  
 PI STA = 13+00.00  
 $\Delta = 0^\circ 26' 33''$  (LT)  
 $D = 0^\circ 26' 33''$   
 $R = 12,944.21'$   
 $T = 50.00'$   
 $L = 100.00'$   
 $E = 0.10'$   
 $e = NC$   
 TR = N/A  
 SE RUN = N/A  
 PC STA = 12+50.00  
 PT STA = 13+50.00

**PROP. CURVE PRCL-2**  
 PI STA = 19+00.00  
 $\Delta = 0^\circ 20' 33''$  (LT)  
 $D = 0^\circ 20' 33''$   
 $R = 16,731.69'$   
 $T = 50.00'$   
 $L = 100.00'$   
 $E = 0.07'$   
 $e = NC$   
 TR = N/A  
 SE RUN = N/A  
 PC STA = 18+50.00  
 PT STA = 19+50.00

CENTERLINE SUMMARY			
STATION	NORTHING	EASTING	DESCRIPTION
12+00.00	792049.61	2511124.20	POT
12+50.00	792099.60	2511123.21	BEGIN CONST
13+00.00	792149.59	2511122.23	PI
19+00.00	792749.37	2511105.82	PI
25+20.00	793369.03	2511085.16	END CONST
25+50.00	793399.01	2511084.16	POT

FILE NAME = H:\6184\CADD\_Sheets\6184\_Sht\_07\_Alignment\_Ties.dgn  
**HMG** ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611

DESIGNED - LDG  
 DRAWN - KHL  
 CHECKED -  
 DATE -

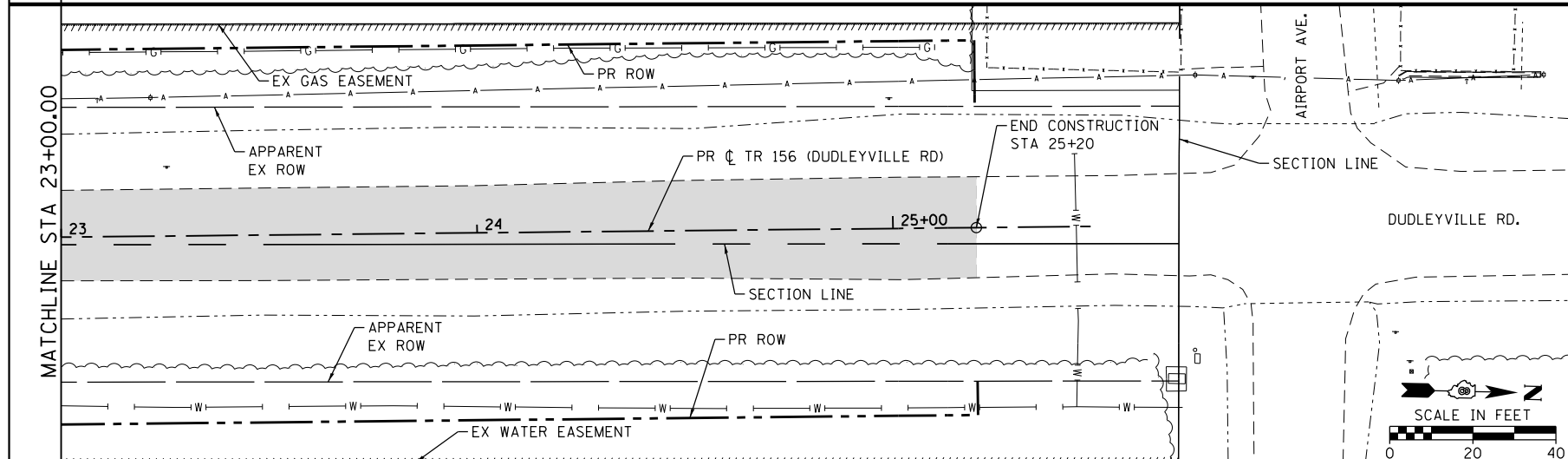
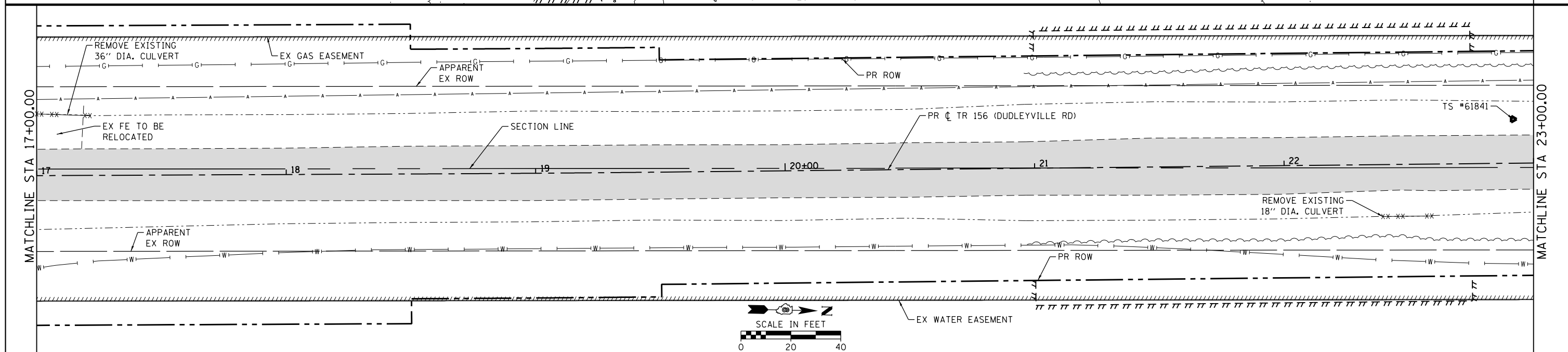
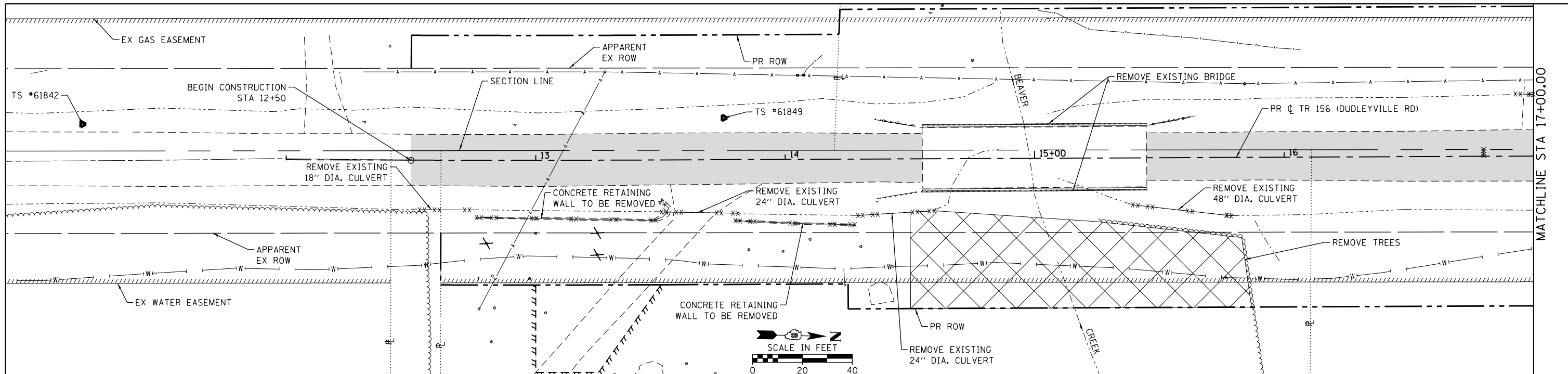
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ALIGNMENT, TIES AND BENCHMARKS

SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

TR RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	7
CONTRACT NO. 97697				
ILLINOIS FED. AID PROJECT				



LEGEND	
	PR RIGHT-OF-WAY
	EX RIGHT-OF-WAY
	PR TEMP EASEMENT
	TREE REMOVAL (ACRES)
	TREE REMOVAL (UNITS)
	LINEAR REMOVAL ITEMS
	EX ROADWAY

FILE NAME = H:\6184\CADD\_Sheets\6184\_Sht\_08\_PlanRemovals.dgn  
 HMG ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611

DESIGNED - LDG  
 DRAWN - KHL  
 CHECKED -  
 DATE -  
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

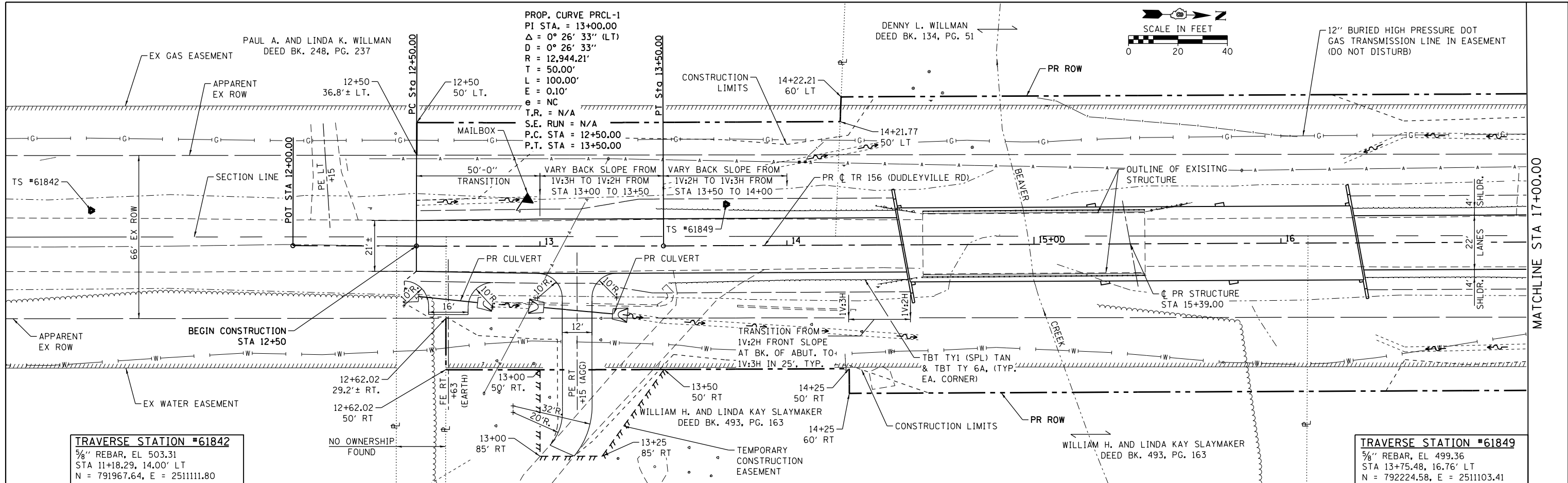
PLAN REMOVALS  
 SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

TR RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	8
CONTRACT NO. 97697				
ILLINOIS FED. AID PROJECT				



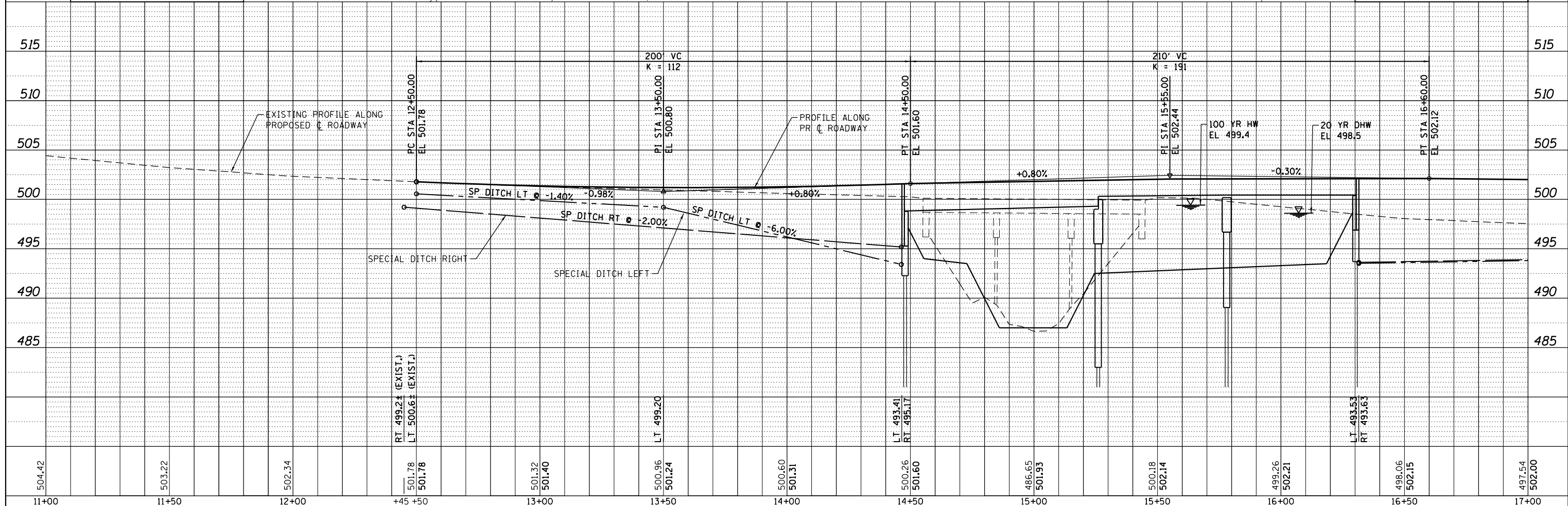
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	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		
	NOTE BOOK NO.		
	FILE NAME		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		
	NOTE BOOK NO.		
	FILE NAME		



**TRAVERSE STATION #61842**  
 3/8" REBAR, EL 503.31  
 STA 11+18.29, 14.00' LT  
 N = 791967.64, E = 2511111.80

**TRAVERSE STATION #61849**  
 3/8" REBAR, EL 499.36  
 STA 13+75.48, 16.76' LT  
 N = 792224.58, E = 2511103.41



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USER NAME = klaux PLOT SCALE = 40.0000' / in. PLOT DATE = 3/15/2019	CHECKED -	REVISED -	CONTRACT NO. 97697					
	DATE -	REVISED -	ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

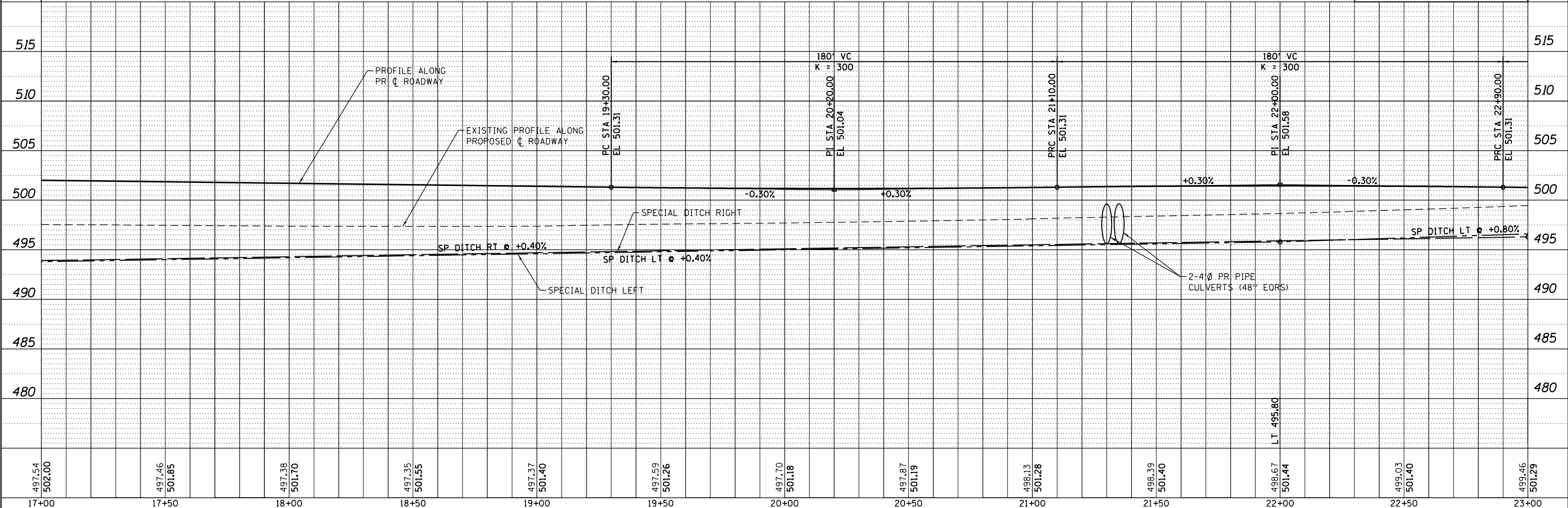
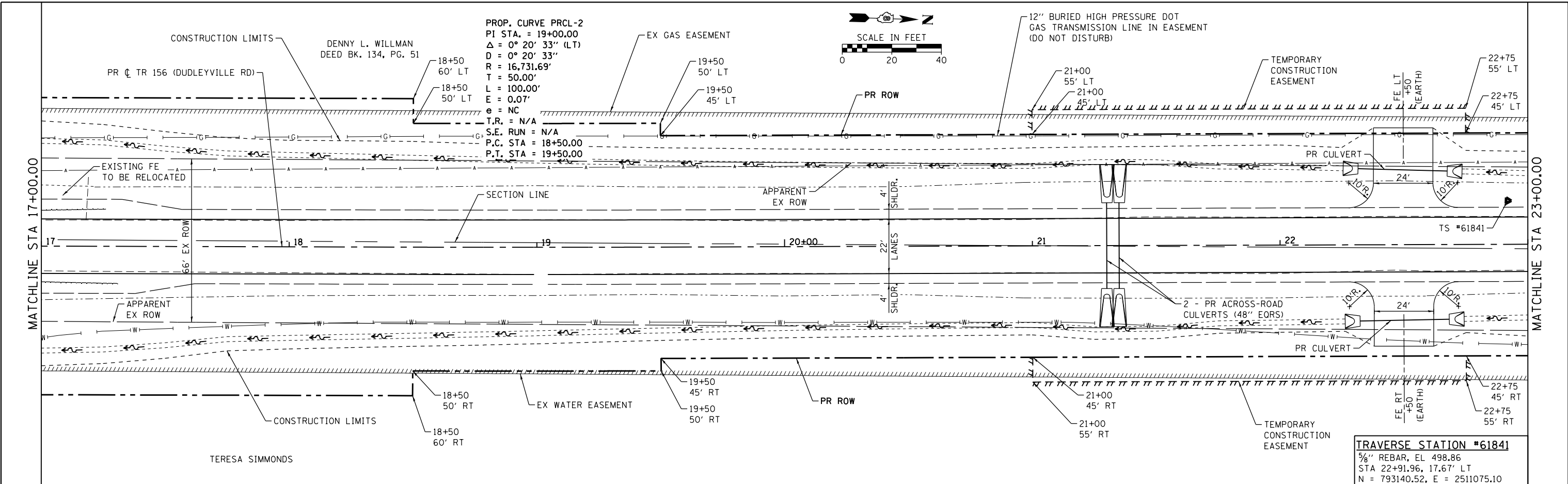
PLAN AND PROFILE  
EXISTING & PROPOSED ROADWAY

SCALE: SHEET NO. 1 OF 3 SHEETS STA. TO STA.

Sheet 1  
Angle: 91.3124  
Align: PRCL

PLAN	SURVEYED	DATE
	PLOTTED	BY
	ALIGNED	
	CHECKED	
	FILED	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES	
	CHECKED	
	STRUCTURE	
	NOTATIONS	
	CHFD	
	NO.	

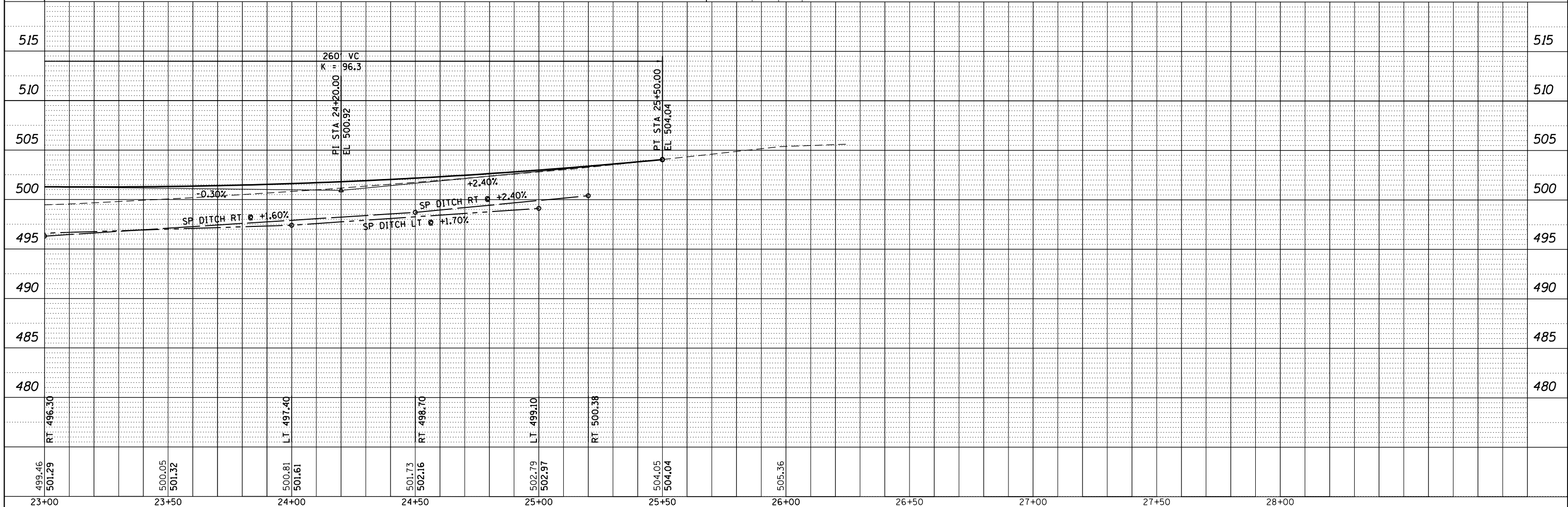
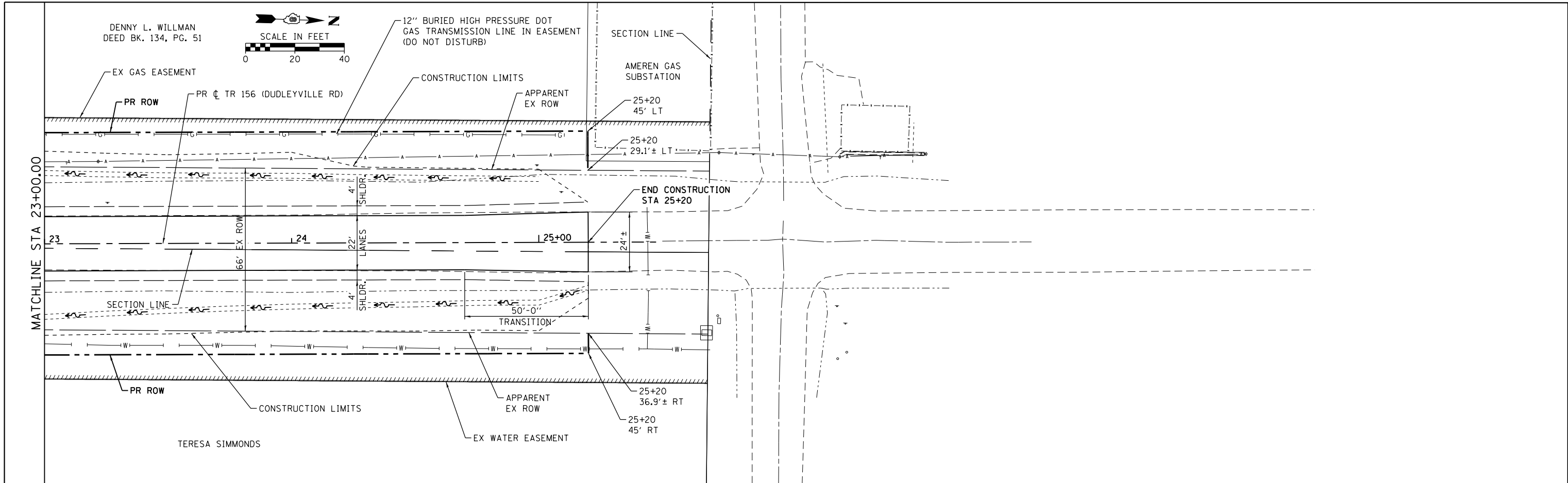


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HMG ENGINEERS, INC. 9360 HOLY CROSS LANE BREESE, ILLINOIS 62230 (618) 526-9611	DRAWN -	REVISED -	156	08-02201-00-BR	BOND	39	10
USER NAME = klaux	CHECKED -	REVISED -	CONTRACT NO. 97697				
PLOT SCALE = 40.0000' / in.	DATE -	REVISED -	ILLINOIS FED. AID PROJECT				
PLOT DATE = 3/15/2019			SCALE: SHEET NO. 2 OF 3 SHEETS STA. TO STA.				

Sheet 2  
 Angle: 91.7231  
 Align: PRCL

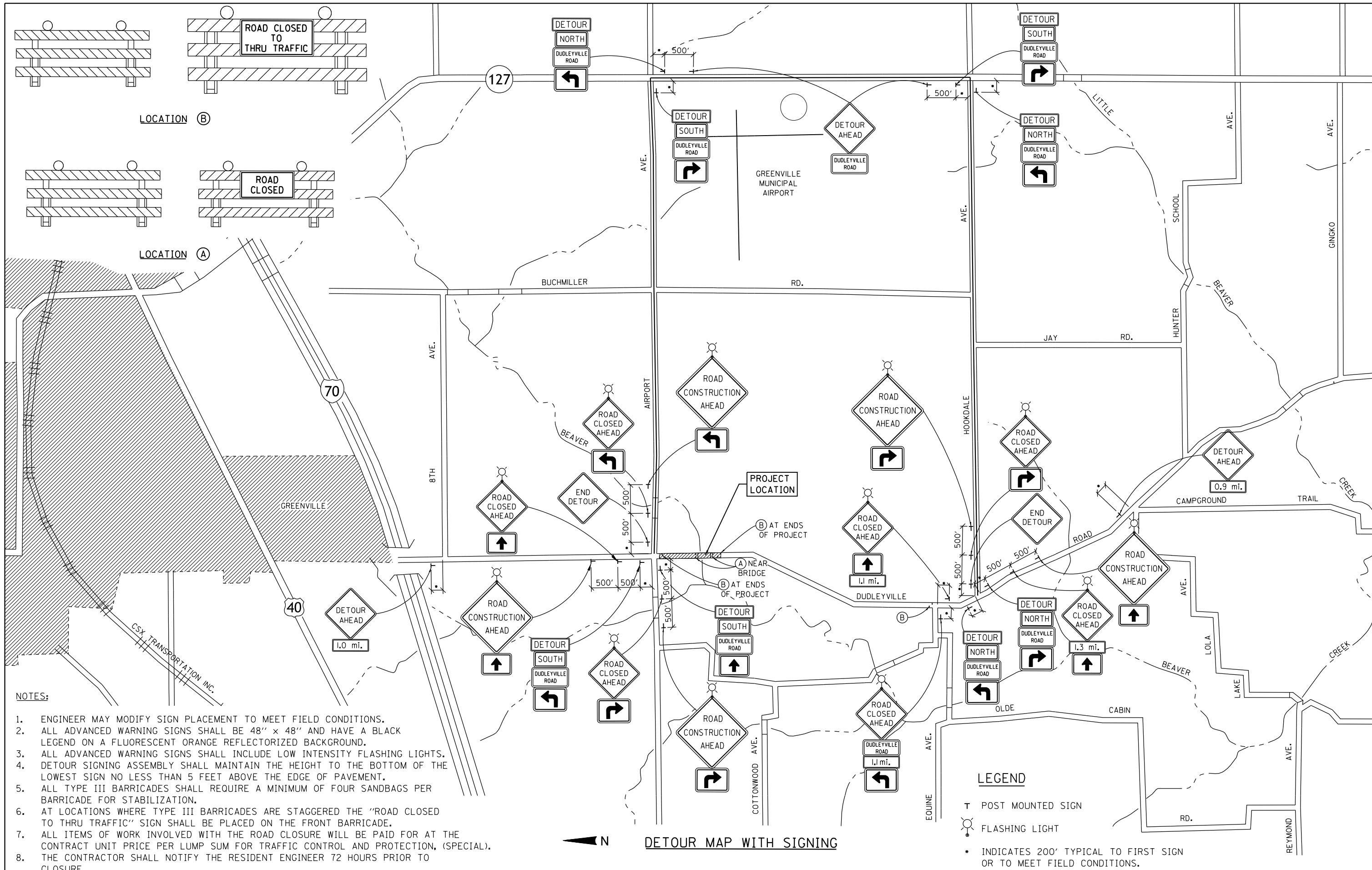
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	PLOTTED		
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	CHECKED		
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PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE CHECKED		
	NOTATIONS CHKD		
	NO.		



FILE NAME = H:\6184\CADD_Sheets\6184_Sht_11_PlanProf_3.dgn	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PLAN AND PROFILE</b> <b>EXISTING &amp; PROPOSED ROADWAY</b>	TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HMG ENGINEERS, INC. 9360 HOLY CROSS LANE BREESE, ILLINOIS 62230 (618) 526-9611	DRAWN -	REVISED -			156	08-02201-00-BR	BOND	39	11
USER NAME = klaux	CHECKED -	REVISED -			CONTRACT NO. 97697			ILLINOIS FED. AID PROJECT	
PLOT SCALE = 48.0189' / in.	DATE -	REVISED -			SCALE:	SHEET NO. 3 OF 3 SHEETS	STA.	TO STA.	

Sheet: 3  
Angle: 91.7406  
Align: PRCL



**NOTES:**

1. ENGINEER MAY MODIFY SIGN PLACEMENT TO MEET FIELD CONDITIONS.
2. ALL ADVANCED WARNING SIGNS SHALL BE 48" x 48" AND HAVE A BLACK LEGEND ON A FLUORESCENT ORANGE REFLECTORIZED BACKGROUND.
3. ALL ADVANCED WARNING SIGNS SHALL INCLUDE LOW INTENSITY FLASHING LIGHTS.
4. DETOUR SIGNING ASSEMBLY SHALL MAINTAIN THE HEIGHT TO THE BOTTOM OF THE LOWEST SIGN NO LESS THAN 5 FEET ABOVE THE EDGE OF PAVEMENT.
5. ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR SANDBAGS PER BARRICADE FOR STABILIZATION.
6. AT LOCATIONS WHERE TYPE III BARRICADES ARE STAGGERED THE "ROAD CLOSED TO THRU TRAFFIC" SIGN SHALL BE PLACED ON THE FRONT BARRICADE.
7. ALL ITEMS OF WORK INVOLVED WITH THE ROAD CLOSURE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LUMP SUM FOR TRAFFIC CONTROL AND PROTECTION, (SPECIAL).
8. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER 72 HOURS PRIOR TO CLOSURE.

**DETOUR MAP WITH SIGNING**

**LEGEND**

- T POST MOUNTED SIGN
- ⚡ FLASHING LIGHT
- INDICATES 200' TYPICAL TO FIRST SIGN OR TO MEET FIELD CONDITIONS.

FILE NAME = H:\6184\CADD\_Sheets\6184\_Sht\_12\_DetourMap.dgn  
**HMG** ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611  
 USER NAME = k1aux  
 PLOT SCALE = 400.0000' / in.  
 PLOT DATE = 3/15/2019

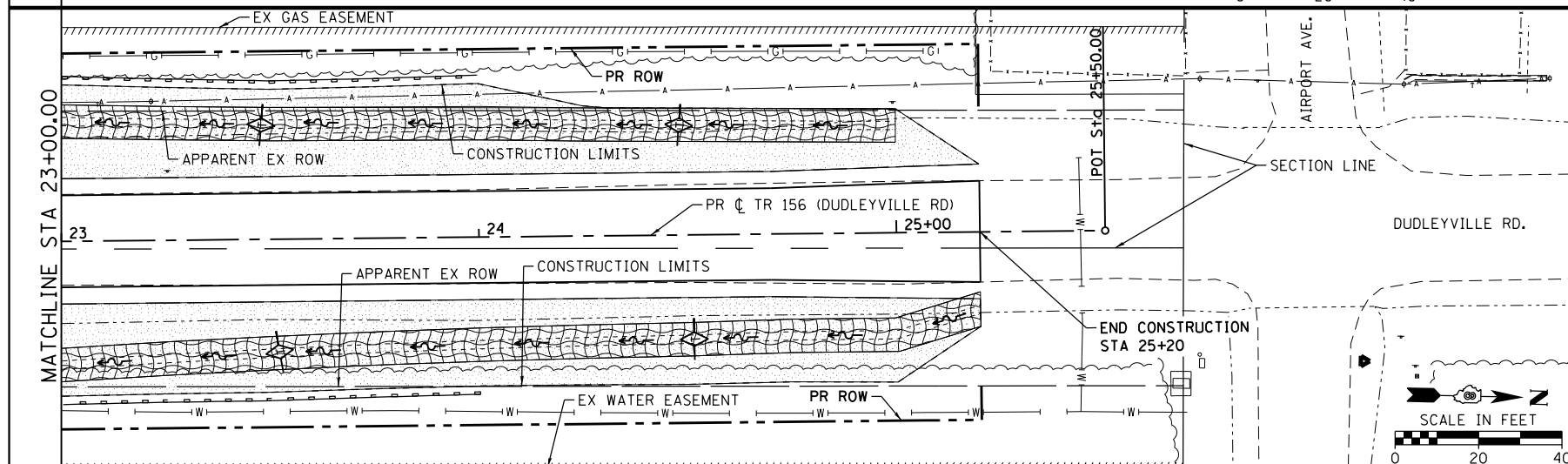
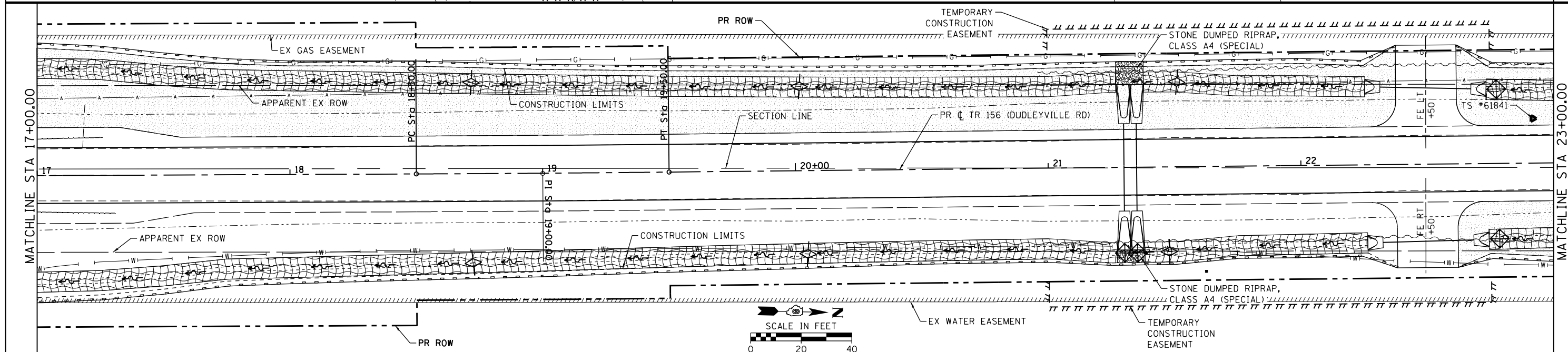
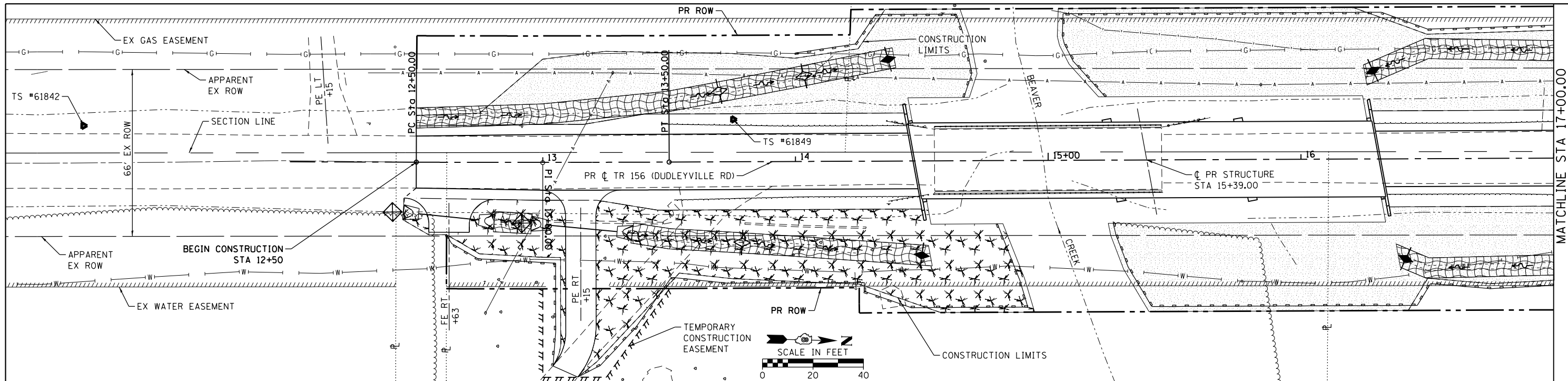
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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**DETOUR MAP**  
 SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

TR RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	12
<b>CONTRACT NO. 97697</b>				

ILLINOIS FED. AID PROJECT



- GENERAL NOTES:**
- CONTRACTOR SHALL CONSULT JOB SPECIFICATIONS FOR MORE INFORMATION.
  - LAYOUT OF EROSION CONTROL MEASURES MAY BE ADJUSTED IN FIELD BY ENGINEER FOR VARYING GROUND CONDITIONS.
  - TEMPORARY DITCH CHECKS SHALL BE URETHANE FOAM/GEOTEXTILE DITCH CHECKS.
  - HAY OR STRAW BALES SHALL NOT BE USED FOR DITCH CHECKS.
  - AGGREGATE DITCH CHECKS SHALL BE PLACED ACCORDING TO THE DETAILS SHOWN IN THESE PLANS AND AS DIRECTED BY THE ENGINEER.
  - ALL DISTURBED AREAS SHALL RECEIVE TEMPORARY EROSION CONTROL SEEDING AS DESCRIBED IN SPECS. UNTIL PERMANENT STABILIZATION CAN BE PERFORMED.
  - THE COUNTY WILL ASSUME RESPONSIBILITY FOR MAINTAINING EROSION CONTROL MEASURES THROUGH FINAL STABILIZATION AFTER IDOT ACCEPTANCE OF WORK BY CONTRACTOR.

**LEGEND**

	SEEDING, CLASS 2 AND HEAVY DUTY EROSION CONTROL BLANKET
	SEEDING, CLASS 1 AND MULCH, METHOD 2
	SEEDING, CLASS 2 AND MULCH, METHOD 2
	PERIMETER EROSION BARRIER
	DITCH FLOW ARROW
	TEMPORARY DITCH CHECK
	AGGREGATE DITCH CHECK
	INLET AND PIPE PROTECTION

FILE NAME = H:\6184\CADD\_Sheets\6184\_Sht\_13\_ErosionControl.dgn  
 HMG ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611

DESIGNED -  
 DRAWN -  
 CHECKED -  
 DATE -

REVISÉ -  
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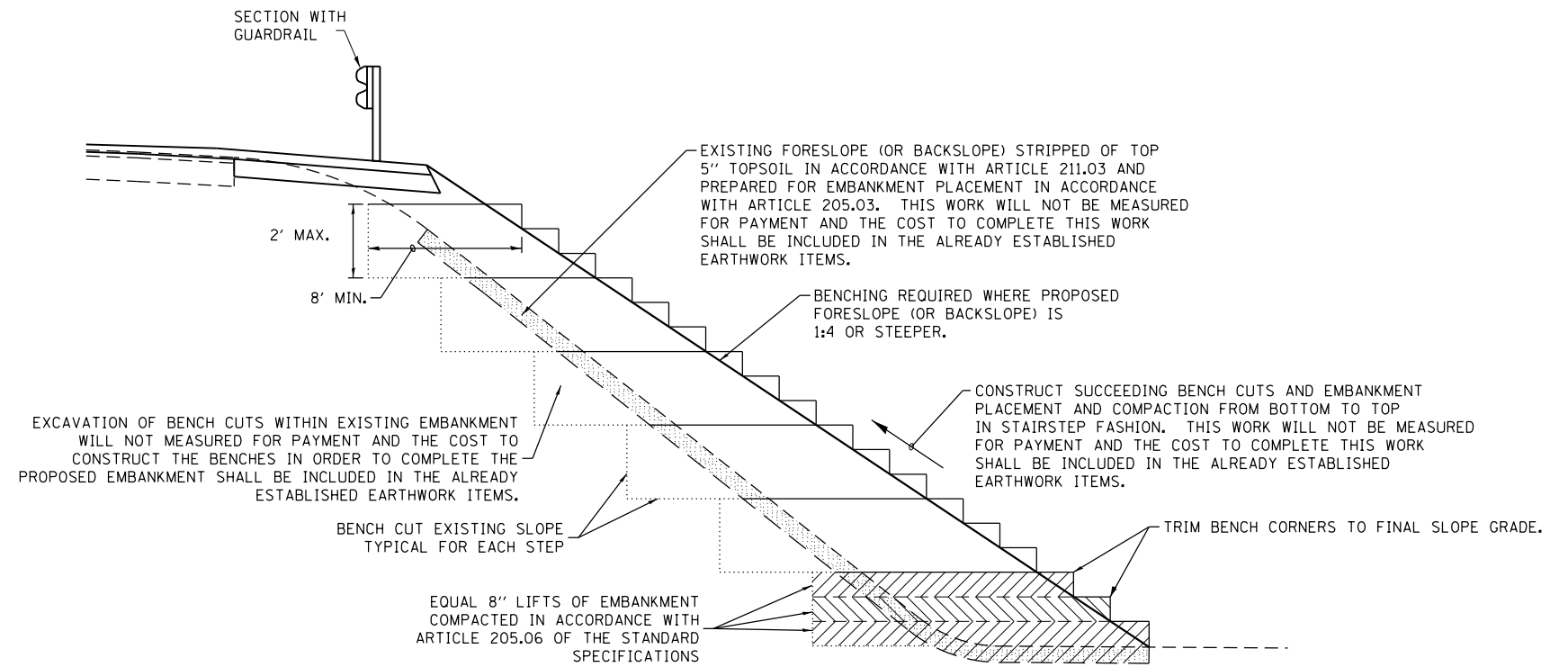
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**EROSION CONTROL PLAN**

SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

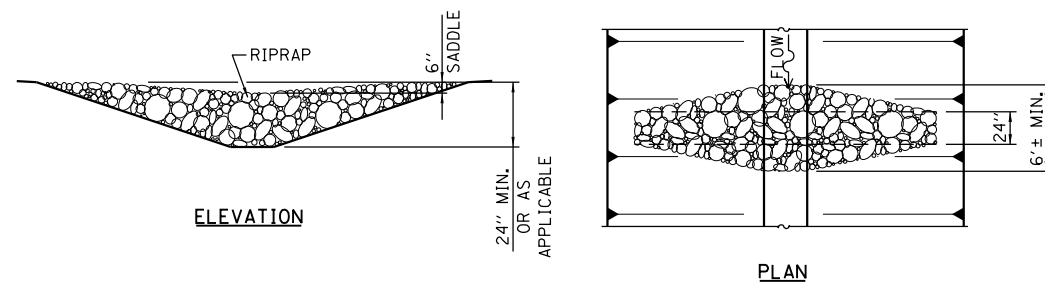
TR RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	13
CONTRACT NO. 97697				
ILLINOIS FED. AID PROJECT				



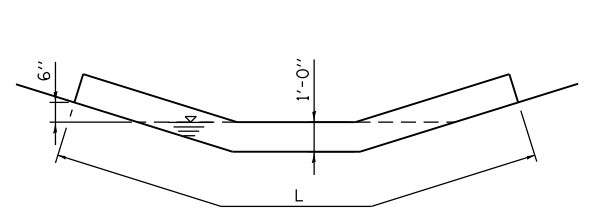


**TYPICAL BENCHING FOR EMBANKMENTS DETAIL**

(NOT TO SCALE)

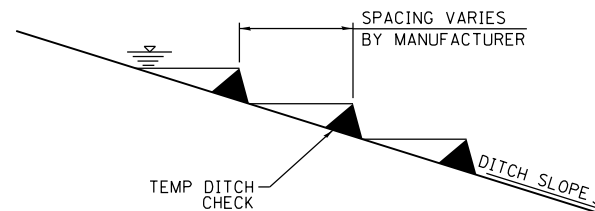


**AGGREGATE DITCH CHECK**



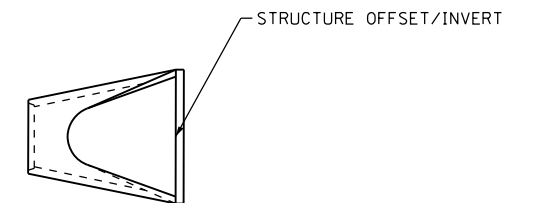
**TYPICAL TEMPORARY DITCH CHECK SECTION**

(NOT TO SCALE)



**TYPICAL DITCH CHECK PROFILE**

(NOT TO SCALE)



**METAL END SECTION DETAIL**

FILE NAME = H:\6184\CADD_Sheets\6184_Sht_14_15_ConstDets.dgn	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CONSTRUCTION DETAILS</b>		TR	SECTION	COUNTY	TOTAL	SHEET
HMG ENGINEERS, INC. 9360 HOLY CROSS LANE BREESE, ILLINOIS 62230 (618) 526-9611	USER NAME = k.laux	REVISED -				156	08-02201-00-BR	BOND	39	14
PLOT SCALE = 10,0000' / 1" =	CHECKED -	REVISED -		CONTRACT NO. 97697						
PLOT DATE = 3/15/2019	DATE -	REVISED -		SCALE:	SHEET 1 OF 2 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT			



**FINAL BACKFILL - 1**  
 LOCATION - EDGE OF TRENCH LOCATED WITHIN 2.0 FT OF A PERMANENT SURFACE, INCLUDING ENTRANCES AND SIDEWALK  
 PIPE MATERIAL - RIGID, FLEXIBLE  
 BACKFILL MATERIAL - AGGREGATE  
 PAYMENT - PAID FOR AS TRENCH BACKFILL

**FINAL BACKFILL - 2**  
 LOCATION - EDGE OF TRENCH NOT LOCATED WITHIN 2.0 FT OF A PERMANENT SURFACE, INCLUDING ENTRANCES AND SIDEWALK  
 PIPE MATERIAL - RIGID, FLEXIBLE  
 BACKFILL MATERIAL - SUITABLE EXCAVATED MATERIAL, EARTH  
 PAYMENT - INCLUDED IN THE COST OF PIPE



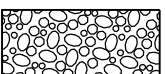
**INITIAL BACKFILL - 1**  
 LOCATION - EDGE OF TRENCH LOCATED WITHIN 2.0 FT OF A PERMANENT SURFACE, INCLUDING ENTRANCES AND SIDEWALK  
 PIPE MATERIAL - RIGID, FLEXIBLE  
 BACKFILL MATERIAL - AGGREGATE  
 PAYMENT - PAID FOR AS TRENCH BACKFILL

**INITIAL BACKFILL - 2A**  
 LOCATION - EDGE OF TRENCH NOT LOCATED WITHIN 2.0 FT OF A PERMANENT SURFACE, INCLUDING ENTRANCES AND SIDEWALK  
 PIPE MATERIAL - RIGID  
 BACKFILL MATERIAL - SUITABLE EXCAVATED MATERIAL, EARTH  
 PAYMENT - INCLUDED IN THE COST OF PIPE

**INITIAL BACKFILL - 2B**  
 LOCATION - EDGE OF TRENCH NOT LOCATED WITHIN 2.0 FT OF A PERMANENT SURFACE, INCLUDING ENTRANCES AND SIDEWALK  
 PIPE MATERIAL - FLEXIBLE  
 BACKFILL MATERIAL - AGGREGATE  
 PAYMENT - INCLUDED IN THE COST OF PIPE

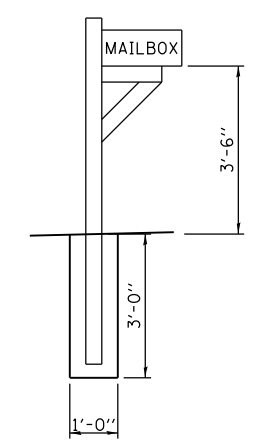
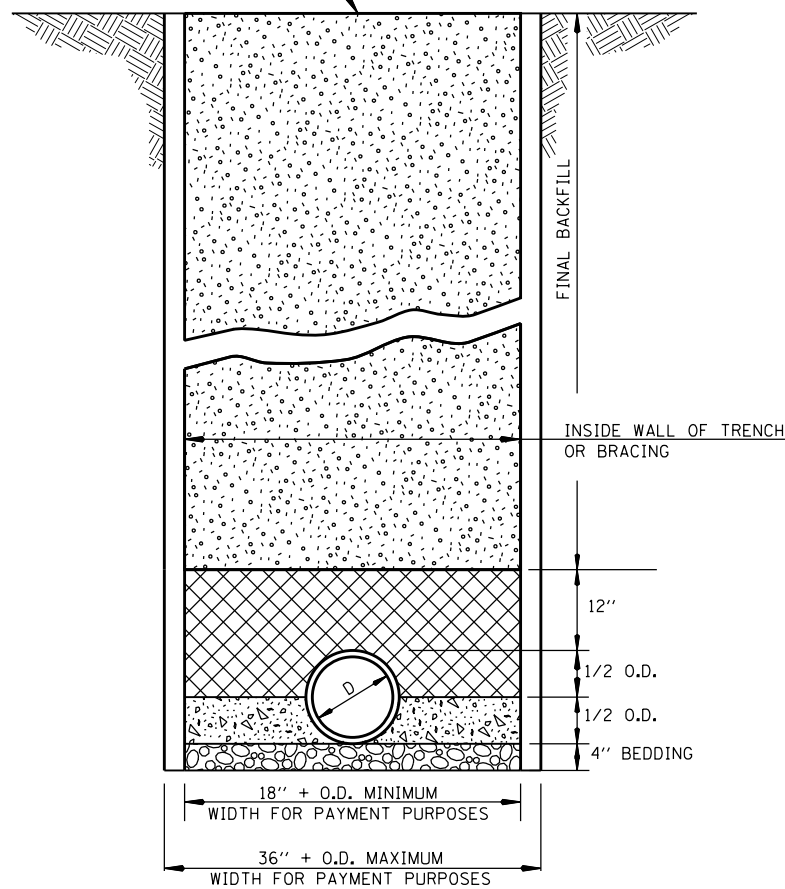


**HAUNCHING**  
 LOCATION - ALL  
 PIPE MATERIAL - RIGID, FLEXIBLE  
 BACKFILL MATERIAL - AGGREGATE  
 PAYMENT - INCLUDED IN THE COST OF PIPE



**BEDDING**  
 LOCATION - ALL  
 PIPE MATERIAL - RIGID, FLEXIBLE  
 BACKFILL MATERIAL - AGGREGATE  
 PAYMENT - INCLUDED IN THE COST OF PIPE

TOP OF GROUND OR  
 BOTTOM OF BASE COURSE OR  
 BOTTOM OF SURFACE COURSE OR  
 BOTTOM OF PAVEMENT



**TYPICAL MAILBOX DETAIL**  
 (NOT TO SCALE)

**PIPE CULVERT/STORM SEWER  
 TRENCHING AND BACKFILL DETAIL**

**BENCHMARK:** Rebar set flush w/ground  
Sta 22+91.90, 17.38' Lt.  
EI 498.86

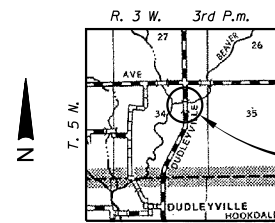
**EXISTING STRUCTURE**

The existing structure, constructed in 1967, consists of three spans precast concrete channel deck beam bridge on closed pile bent abutments, wingwalls and piers, all on timber piles, with some steel fixes. The structure has an overall length of 91'-4"± back to back of abutments, a clear width of 24'-3"±, an overall width of 26'-5"± out to out of the deck and four wingwalls with guardrail at 16'-0"± long, each.

The Contractor shall remove and dispose of the existing structure in accordance with Section 501 of the Standard Specifications.

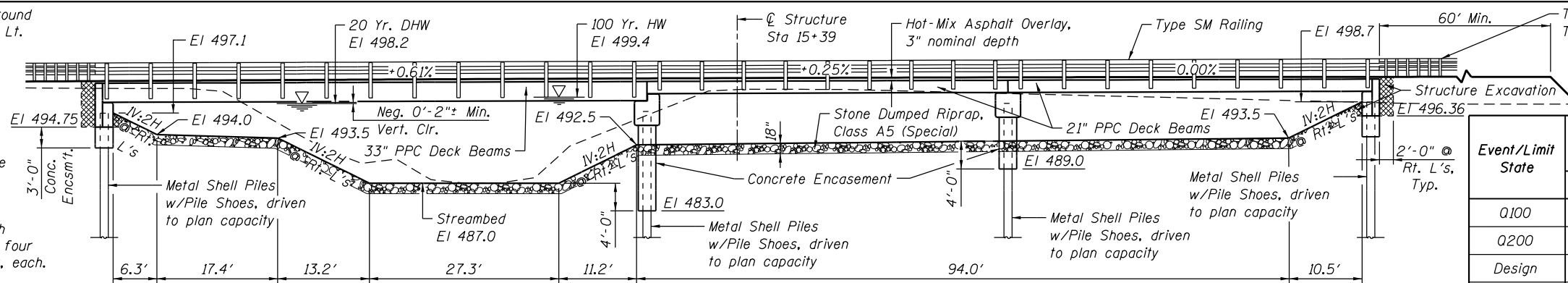
The existing roadway will be closed to traffic during the construction period.

**SALVAGE:** No Salvage



**LOCATION SKETCH**

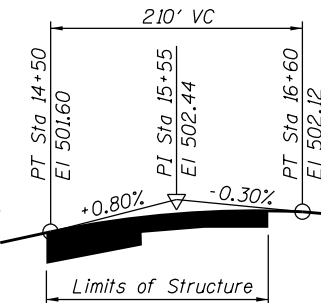
Payment Limits for Controlled Low-Strength Material, Typ.



**ELEVATION**

**Notes:**  
Channel excavation shall be transitioned from the edge of the proposed deck to match the existing channel at the ROW line, as directed by the Engineer.

The Contractor shall note the close proximity of the 12" gas line to the structure and exercise care in proposed construction activities. Consult Ameren and the Engineer as required.

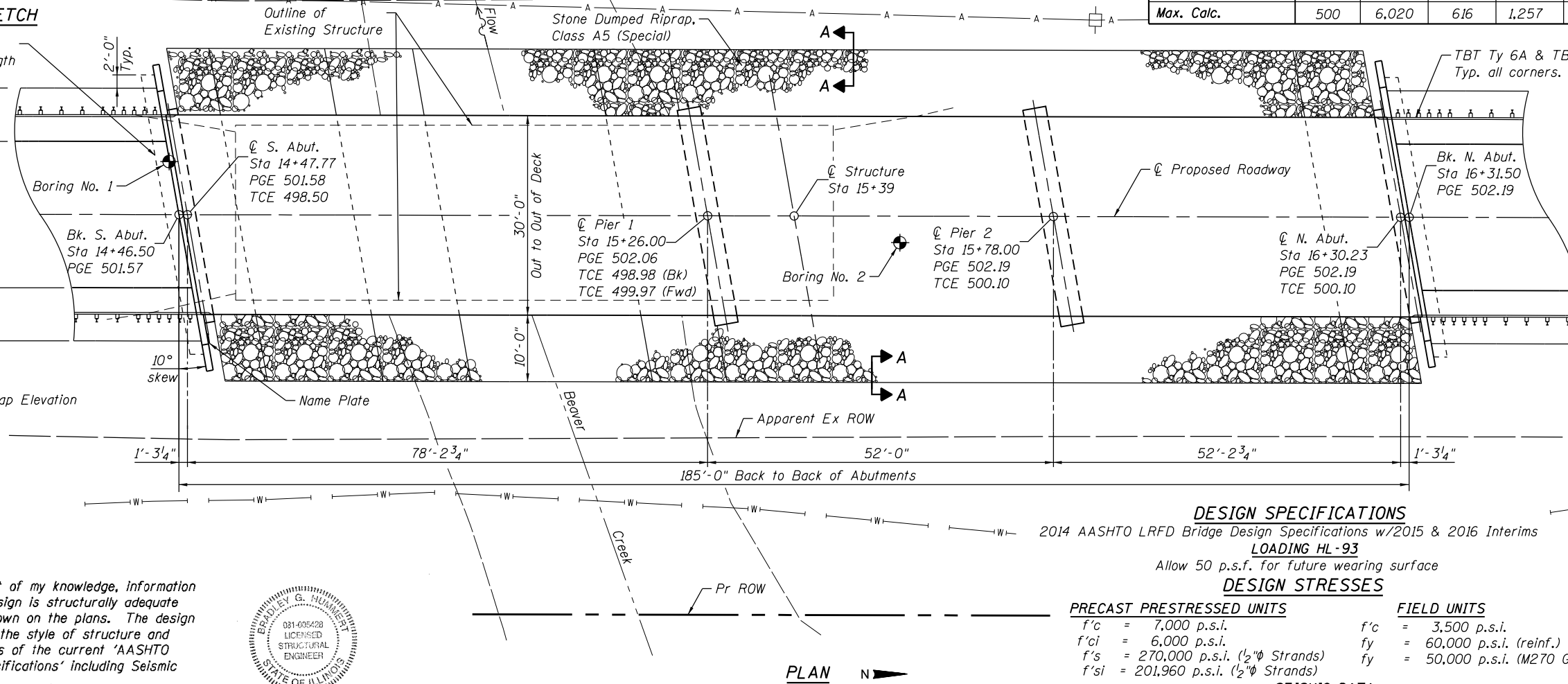


**PROFILE GRADE**

Along  $\bar{C}$  TR 156 (Dudleyville Rd.)

**WATERWAY INFORMATION**

Drainage Area = 17.6 Sq Mi		Existing Overtopping EI = 497.35		at Sta 18+50					
		Proposed Overtopping EI = 501.18		at Sta 20+20					
Flood Event	Freq. Yr.	Q CFS	Opening Sq Ft		Head - Ft		Headwater EI		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	10	2,440	601	783	498.1	0.0	0.7	498.1	498.8
Base	20	2,980	616	970	498.5	0.0	0.7	498.5	499.2
Scour Design Check	100	4,490	616	1,119	499.4	0.0	0.6	499.4	500.0
Overtop Existing	200	4,870	616	1,145	499.6	0.0	0.6	499.6	500.2
Overtop Proposed	4±	1,650	543		497.4	0.1		497.5	
Max. Calc.	N/A								
	500	6,020	616	1,257	500.1	0.0	0.3	500.1	500.4



**PLAN**

**DESIGN SPECIFICATIONS**

2014 AASHTO LRFD Bridge Design Specifications w/2015 & 2016 Interims

**LOADING HL-93**

Allow 50 p.s.f. for future wearing surface

**DESIGN STRESSES**

**PRECAST PRESTRESSED UNITS**

f'c = 7,000 p.s.i.  
f'ci = 6,000 p.s.i.  
f's = 270,000 p.s.i. (1/2" Strands)  
f'si = 201,960 p.s.i. (1/2" Strands)

**FIELD UNITS**

f'c = 3,500 p.s.i.  
fy = 60,000 p.s.i. (reinf.)  
fy = 50,000 p.s.i. (M270 Grade 50)

**SEISMIC DATA**

Seismic Performance Zone (SPZ): 2  
Design Spectral Acceleration at 1.0 sec. (SD1): = 0.242 g  
Design Spectral Acceleration at 0.2 sec. (SD5): = 0.546 g  
Soil Site Class = D

**INDEX OF BRIDGE SHEETS**

1. General Plan & Elevation
2. General Data
3. Superstructure
4. 33" x 36" PPC Deck Beam - Span 1
5. 33" x 36" PPC Deck Beam Details
6. 21" x 36" PPC Deck Beam - Span 2
7. 21" x 36" PPC Deck Beam - Span 3
8. 21" x 36" PPC Deck Beam Details
9. South Pile Bent Abutment
10. Pier 1 Details
11. Pier 2 Details
12. North Pile Bent Abutment
13. Steel Railing, Type SM with Hot-Mix Asphalt Wearing Surface
14. Metal Shell Pile Details
15. Soil Boring Logs
16. Soil Boring Logs

**GENERAL PLAN & ELEVATION**

TR 156 (DUDLEYVILLE RD.)

OVER BEAVER CREEK

SECTION 08-02201-00-BR

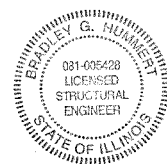
BOND COUNTY

CONTRACT 15+39

SN 003-3223

"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO LRFD Bridge Design Specifications' including Seismic Design."

Bradley G. Hummert, P.E., S.E.  
Licensed Structural Engineer  
in Illinois No. 081-005428



Expires: November 30, 2020

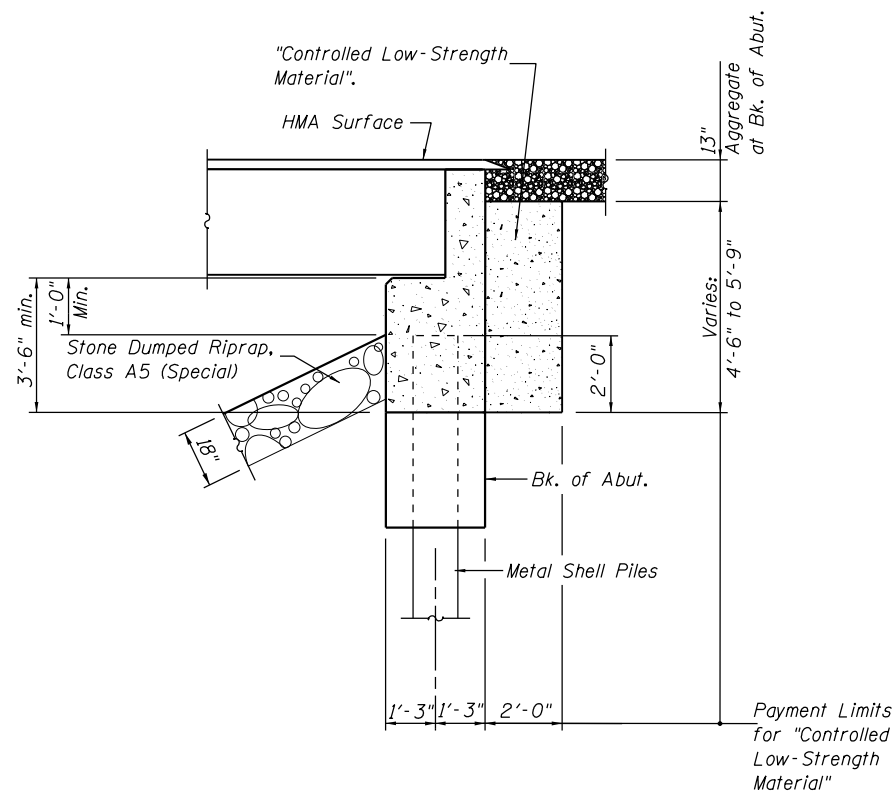
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HMG ENGINEERS, INC. 9360 HOLY CROSS LANE BREESE, ILLINOIS 62230 (618) 526-9611	DRAWN - KHL	REVISED -
PLOT SCALE = 28.0000' / 1"	CHECKED - BGH	REVISED -
PLOT DATE = 3/15/2019	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GENERAL PLAN & ELEVATION**

SCALE: SHEET 1 OF 16 SHEETS STA. TO STA.

TR RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	16
CONTRACT NO. 97697				
ILLINOIS FED. AID PROJECT				

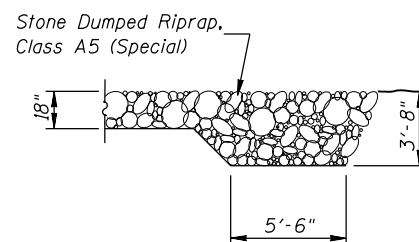


**SECTION THRU ABUTMENT**

Beaver Creek  
 Built 201 by  
 Bond County  
 Section 08-02201-00-BR  
 Proj. No. DW88(561)  
 Station 15+39  
 SN 003-3223 Loading HL-93

**NAME PLATE**

Locate Name Plate as shown in  
 Plan View. See Std. 515001.



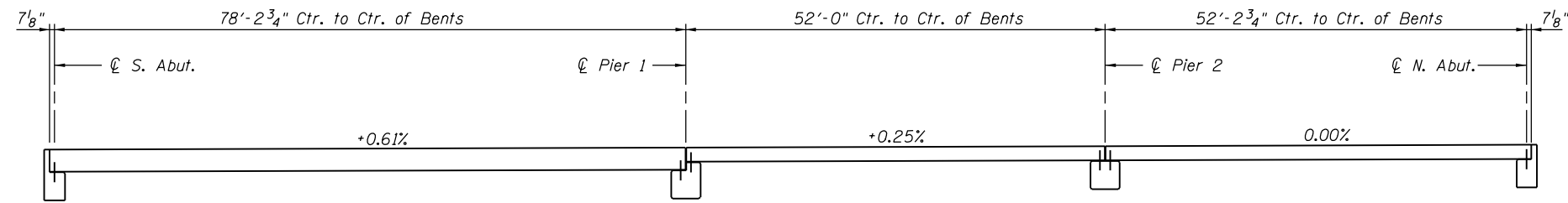
**SECTION A-A**

**GENERAL NOTES**

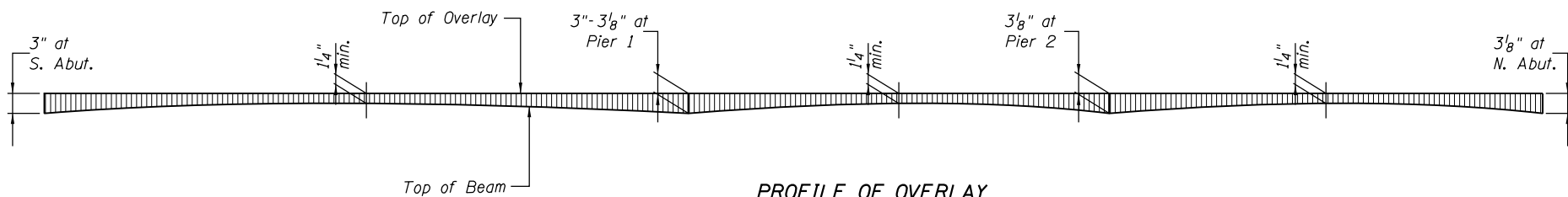
1. The Contractor shall drive four (4) test piles, one at each Substructure Unit in permanent locations, as directed by the Engineer, before ordering remaining piles.
2. Hot-mix asphalt surface course overlay for the bridge deck shall be constructed in accordance with applicable portions of Section 582 of the Standard Specifications.
3. Waterproofing membrane system for the bridge shall be in accordance with material and construction requirements of the applicable portions of Section 581 of the Standard Specifications.
4. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. Deck beams shall be cleaned to the satisfaction of the Engineer before placing the waterproofing membrane system.

**TOTAL BILL OF MATERIAL**

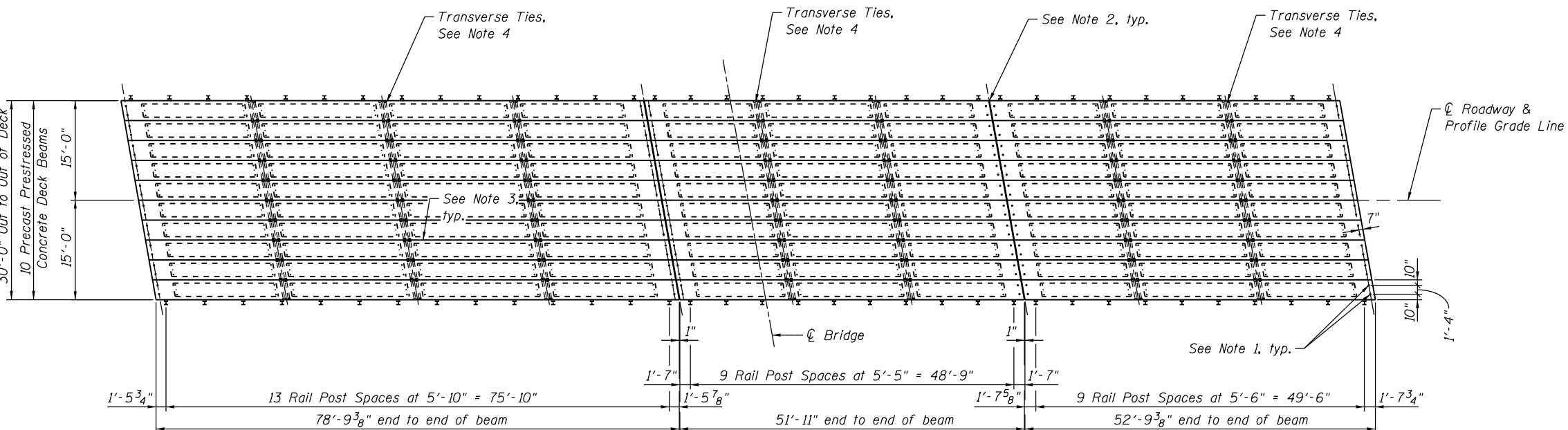
ITEM	UNIT	SUPER.	SUB.	TOTAL
Channel Excavation	Cu Yd	—	—	1,360
Stone Dumped Riprap, Class A5 (Special)	Ton	—	—	858
Hot-Mix Asphalt Surface Course, Mix "C", N50	Ton	70	—	70
Removal of Existing Structures	Each	—	—	1
Structure Excavation	Cu Yd	—	90	90
Concrete Structures	Cu Yd	—	64.5	64.5
Concrete Encasement	Cu Yd	—	21.9	21.9
Prec. Pres. Conc. Dk. Bms. (21" Depth)	Sq Ft	3,141	—	3,141
Prec. Pres. Conc. Dk. Bms. (33" Depth)	Sq Ft	2,364	—	2,364
Reinforcement Bars, Epoxy Coated	Pound	—	19,360	19,360
Steel Railing, Type SM	Foot	370	—	370
Furnishing Metal Shell Piles 14" x 0.312"	Foot	—	940	940
Driving Piles	Foot	—	940	940
Test Pile Metal Shell	Each	—	4	4
Pile Shoes	Each	—	24	24
Name Plates	Each	—	—	1
Waterproofing Membrane System	Sq Yd	612	—	612
Portland Cement Mortar Fairing Course	Foot	1,653	—	1,653
Controlled Low-Strength Material	Cu Yd	—	—	28.6



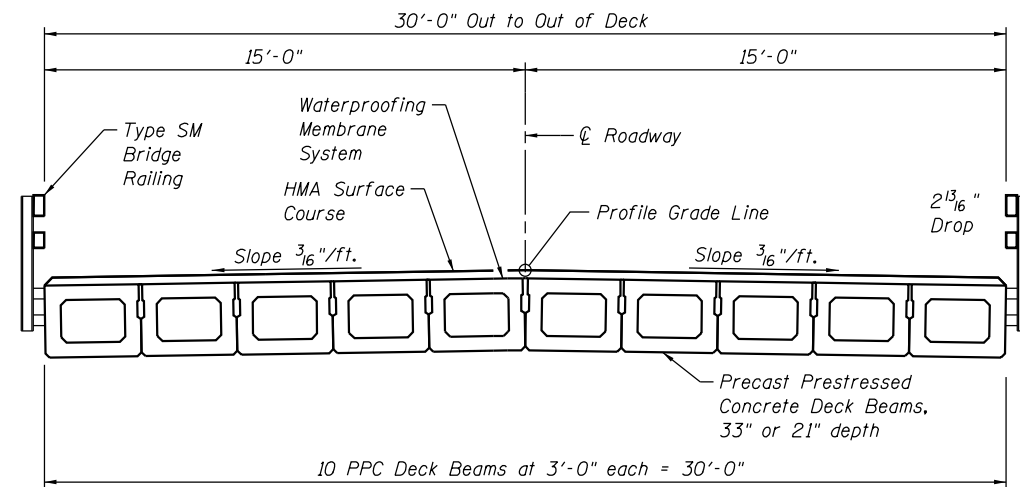
ELEVATION



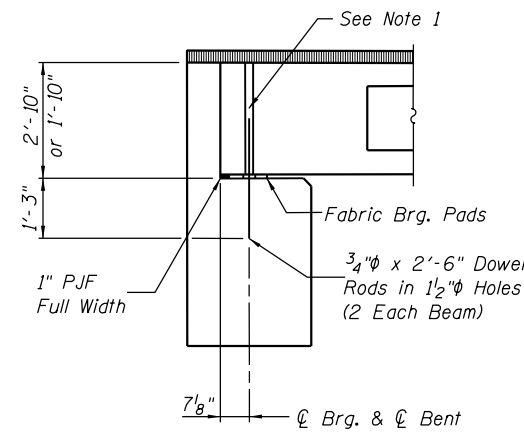
PROFILE OF OVERLAY



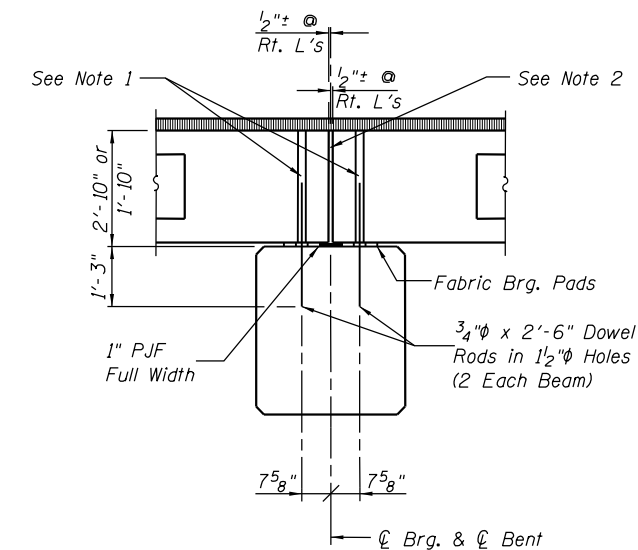
PLAN N



CROSS SECTION



SECTION AT ABUTMENTS  
(Along  $\phi$  Beams)



SECTION AT PIERS  
(Along  $\phi$  Beams)

BILL OF MATERIAL

Item	Unit	Quantity
Portland Cement Mortar Fairing Course	Foot	1,653
Waterproofing Membrane System	Sq. Yd.	612
Hot-Mix Asphalt Surface Course, Mix "C", N50	Ton	70

NOTES

- After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
- Nominal 1" joint at  $\phi$  Pier shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.
- Longitudinal keys shall be grouted.
- The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bars outside shall be filled with grout after transverse tie assembly is in place.

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**HMG** ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611

DESIGNED - LDG  
 DRAWN - KHL  
 CHECKED - BGH  
 DATE -  
 REVISIONS:  
 REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

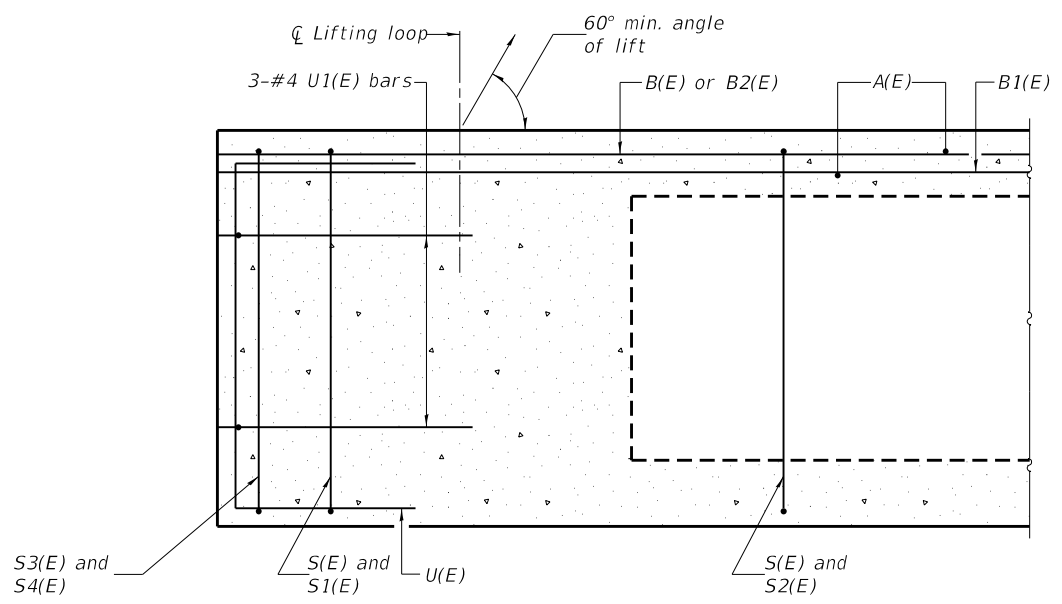
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE  
 STRUCTURE NO. 003-3223

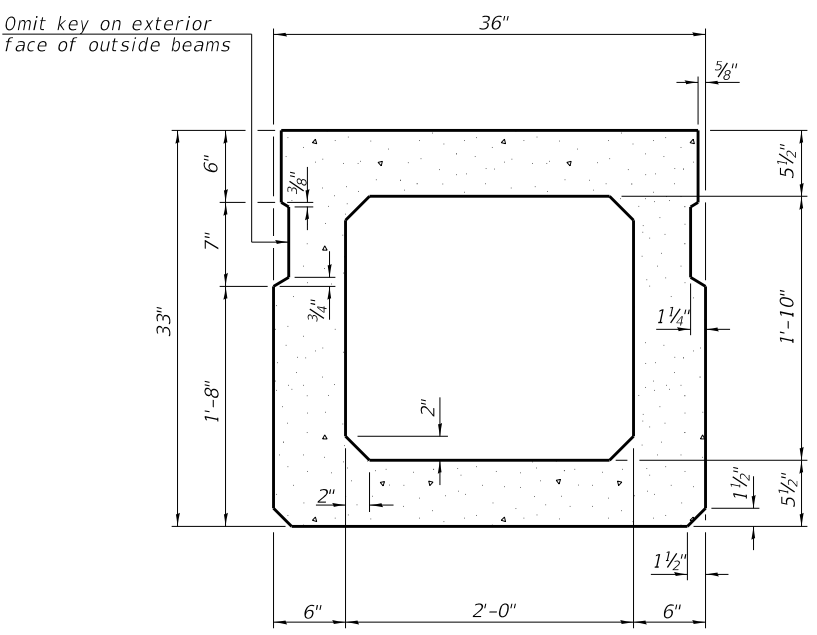
SCALE: SHEET 3 OF 16 SHEETS STA. TO STA.

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
RTE	08-02201-00-BR	BOND	39	18
CONTRACT NO. 97697				
ILLINOIS FED. AID PROJECT				

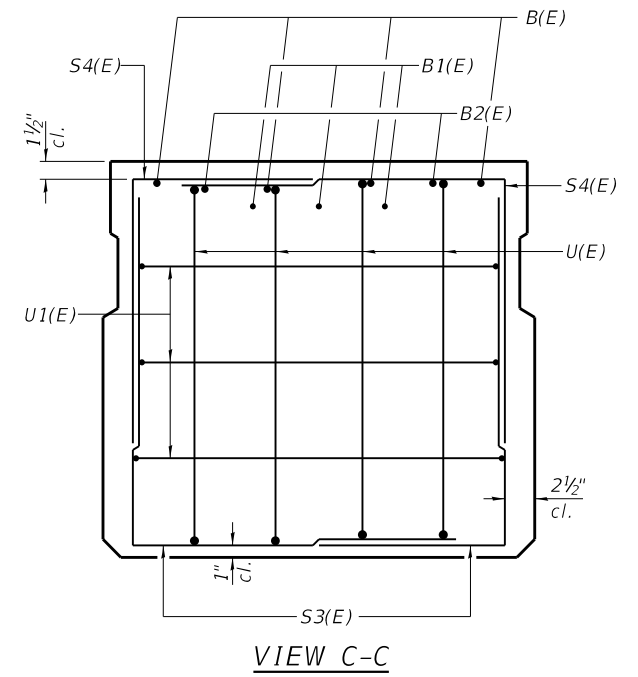




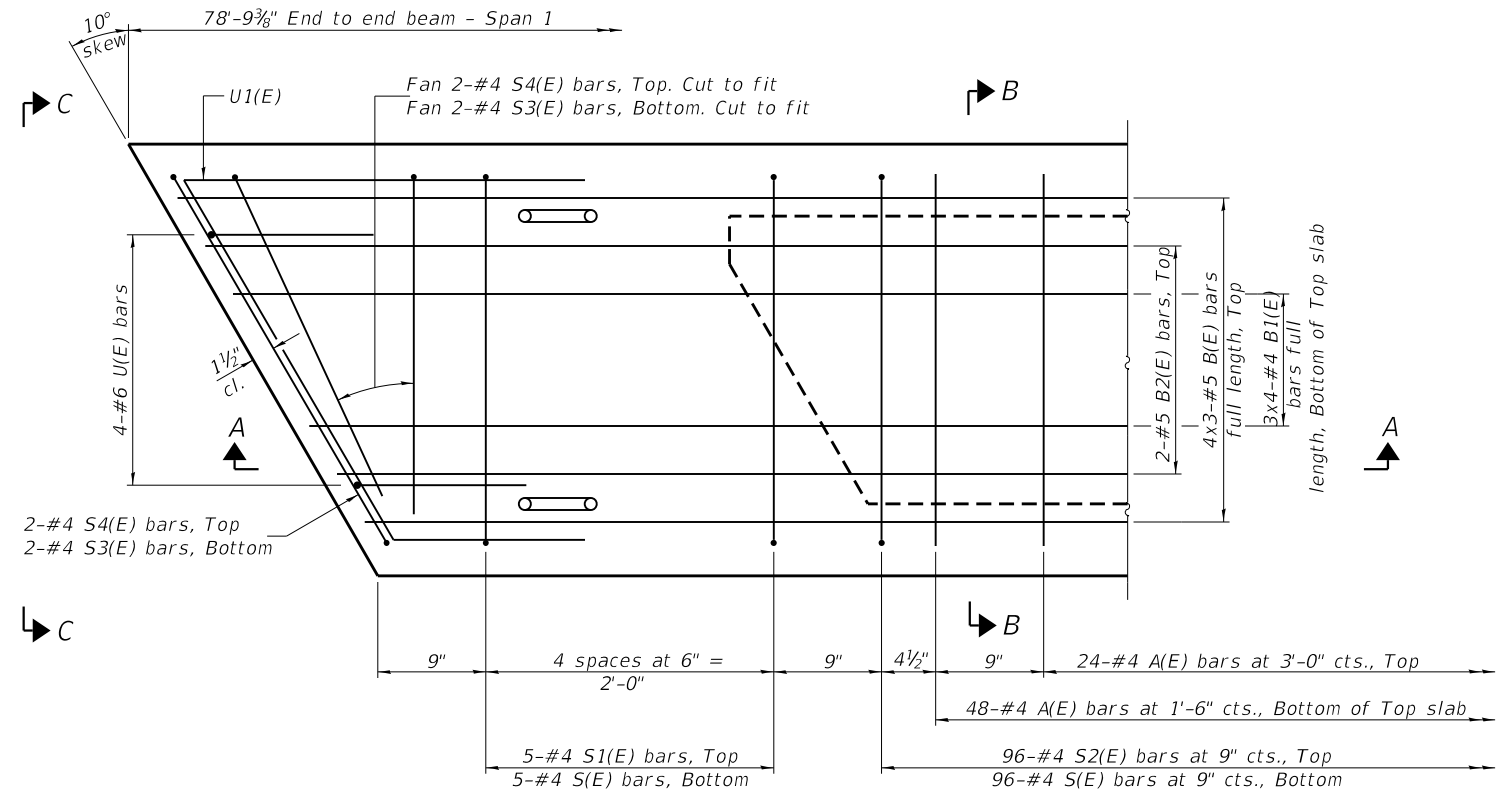
SECTION A-A



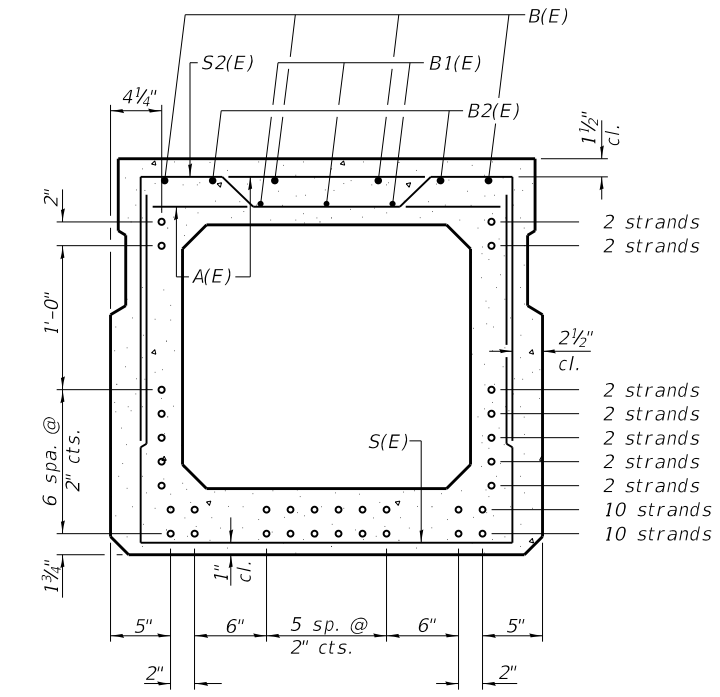
SECTION B-B  
(Showing dimensions)



VIEW C-C



PLAN VIEW



34 - 1/2" strands  
 (10 strands 1 3/4" up, 10 strands 3 3/4" up, 2 strands 5 3/4" up,  
 2 strands 7 3/4" up, 2 strands 9 3/4" up, 2 strands 11 3/4" up,  
 2 strands 13 3/4" up, 2 strands 25 3/4" up, 2 strands 27 3/4" up)

SECTION B-B

(Showing reinforcement and permissible strand locations)  
 Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST  
 ONE BEAM ONLY  
 (For information only)

Bar	No.	Size	Length	Shape
A(E)	72	#4	2'-7"	—
B(E)	12	#5	27'-11"	—
B1(E)	12	#4	21'-1"	—
B2(E)	4	#5	10'-0"	—
S(E)	106	#4	7'-8"	┌
S1(E)	10	#4	6'-5"	┌
S2(E)	96	#4	6'-8"	┌
S3(E)	8	#4	4'-10"	┌
S4(E)	8	#4	4'-3"	┌
U(E)	8	#6	5'-0"	┌
U1(E)	6	#4	5'-7"	┌

Note:  
 See sheet 5 of 16 for additional details and Bill of Material.

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

MINIMUM BAR LAP  
 #4 bar = 1'-11"  
 #5 bar = 2'-6"

PD-3336-R 2-17-2017

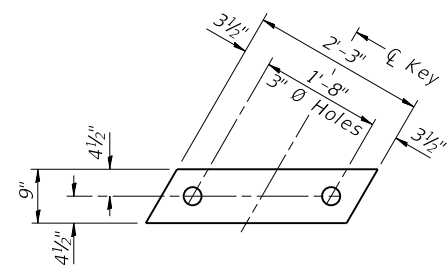
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 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611  
 USER NAME = k.laux  
 PLOT SCALE = 2.0000' / 1" =  
 PLOT DATE = 3/15/2019

DESIGNED - LDG	REVISED -
DRAWN - KHL	REVISED -
CHECKED - BGH	REVISED -
DATE -	REVISED -

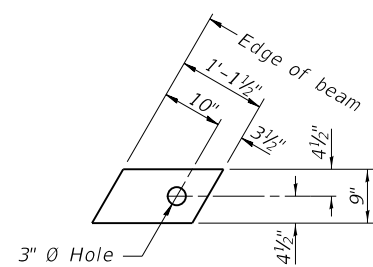
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

33" x 36" PPC DECK BEAM - SPAN 1  
 STRUCTURE NO. 003-3223  
 SCALE: SHEET 4 OF 16 SHEETS STA. TO STA.

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	19
CONTRACT NO. 97697				
ILLINOIS FED. AID PROJECT				



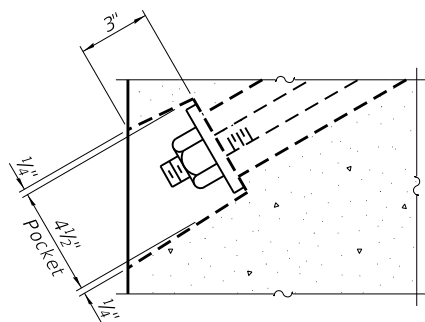
**FABRIC BEARING PAD**  
(Interior)



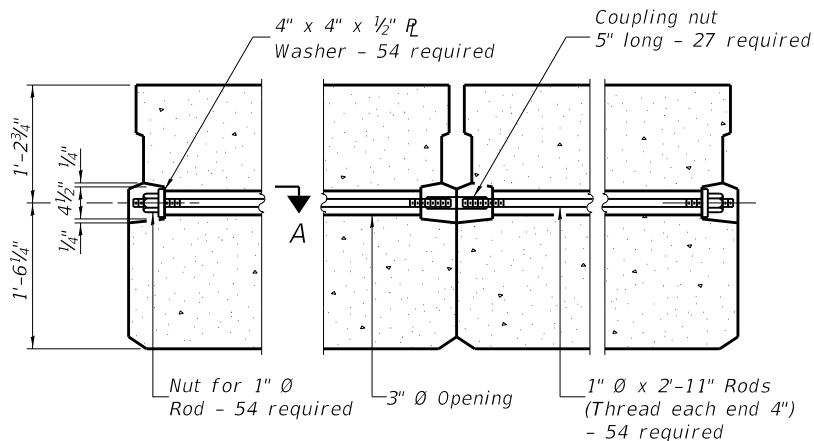
**FABRIC BEARING PAD**  
(Exterior)

**FIXED**

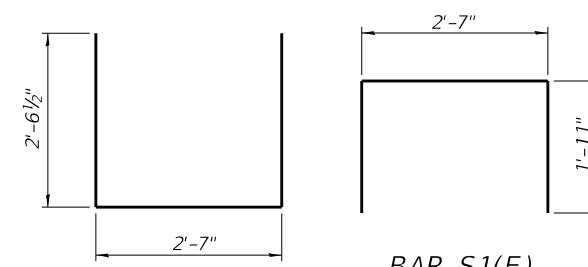
Notes:  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pad shall be bonded to the substructure.



**SECTION A-A**

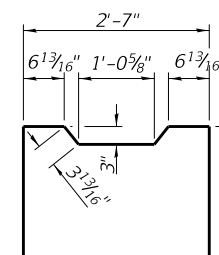


**TYPICAL TRANSVERSE TIE ASSEMBLY**

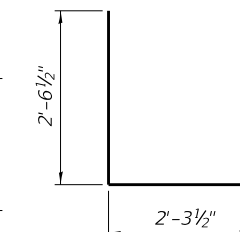


**BAR S1(E)**

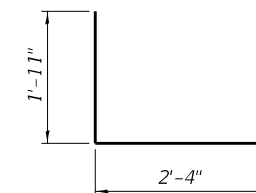
**BAR S(E)**



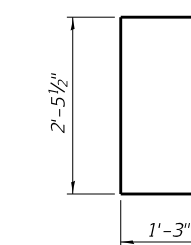
**BAR S2(E)**



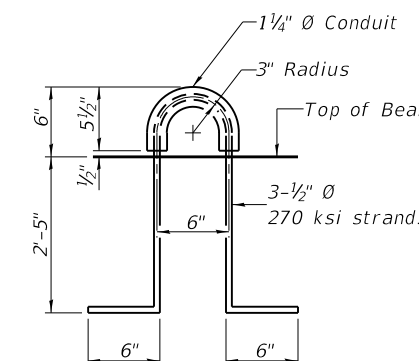
**BAR S3(E)**



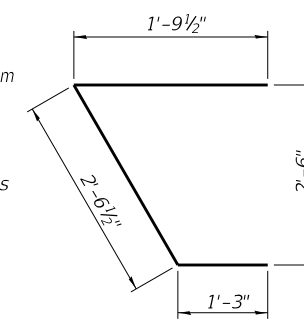
**BAR S4(E)**



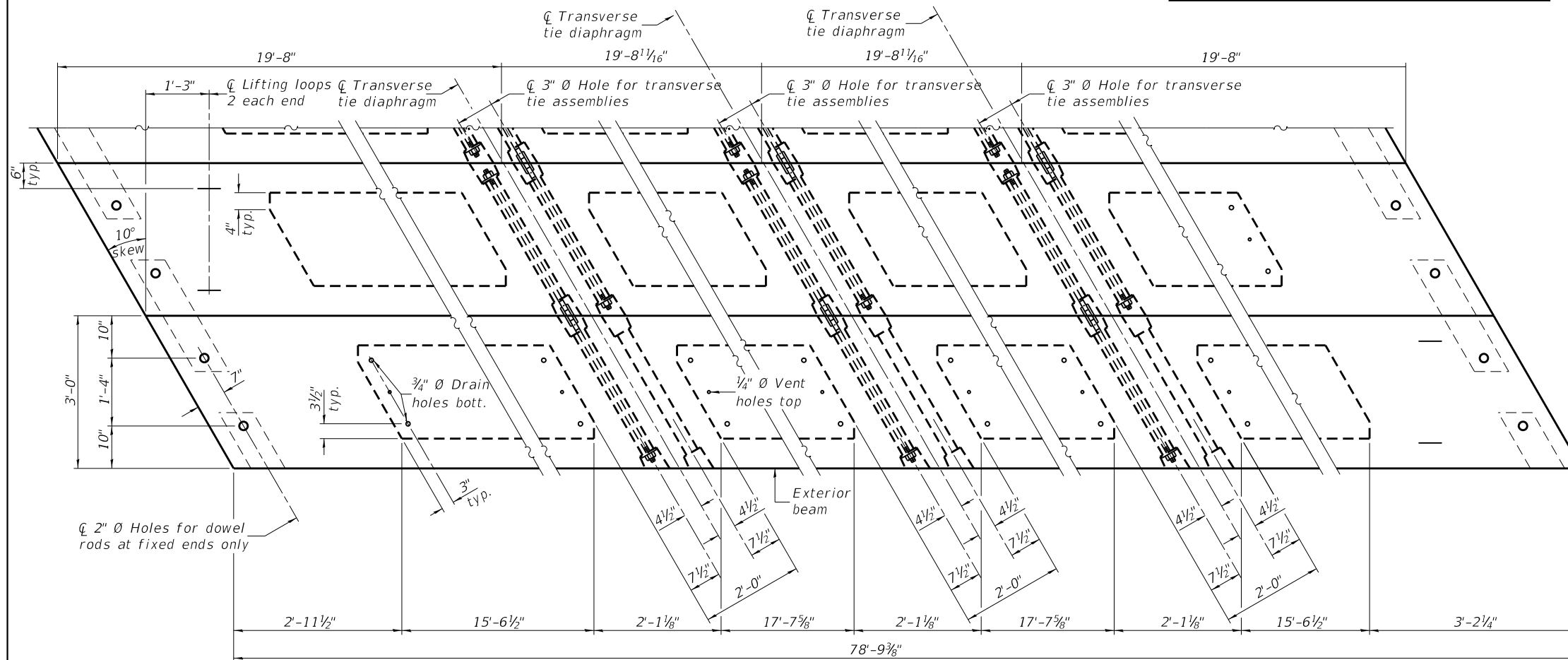
**BAR U(E)**



**LIFTING LOOP DETAIL**



**BAR U1(E)**



**PLAN VIEW**

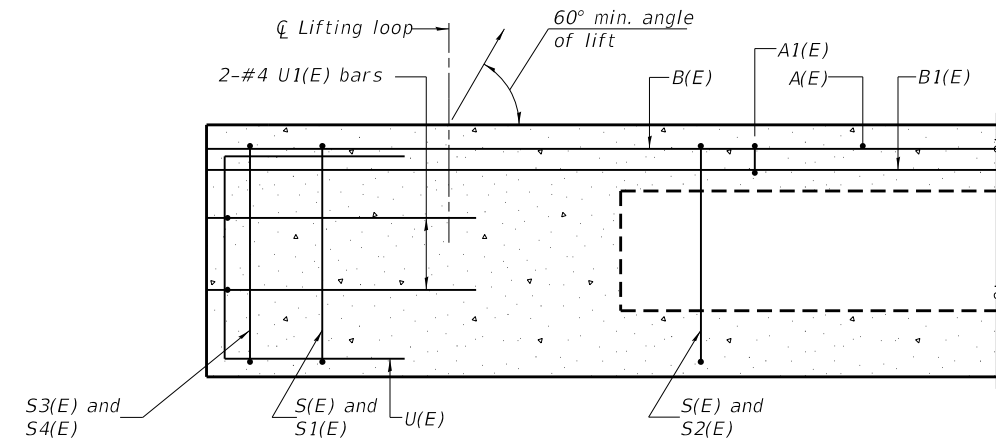
**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 7,000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 6,000 psi.

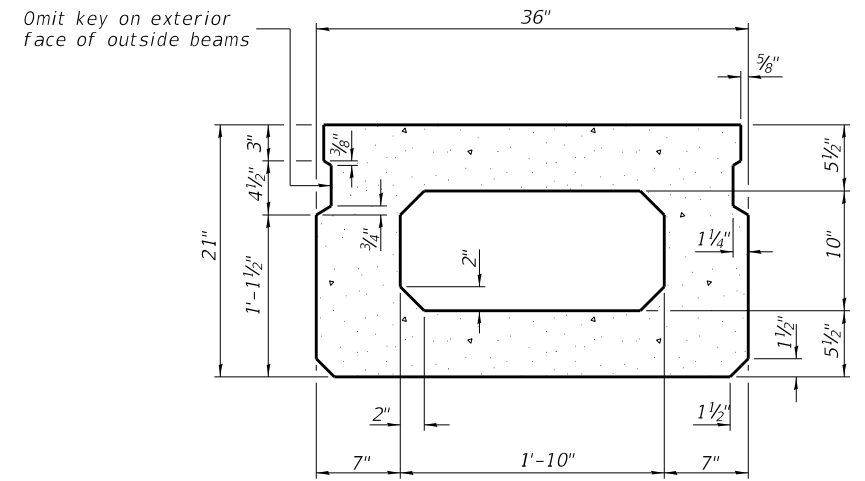
Note: Connect beams in pairs with the transverse tie configuration shown.

**BILL OF MATERIAL**

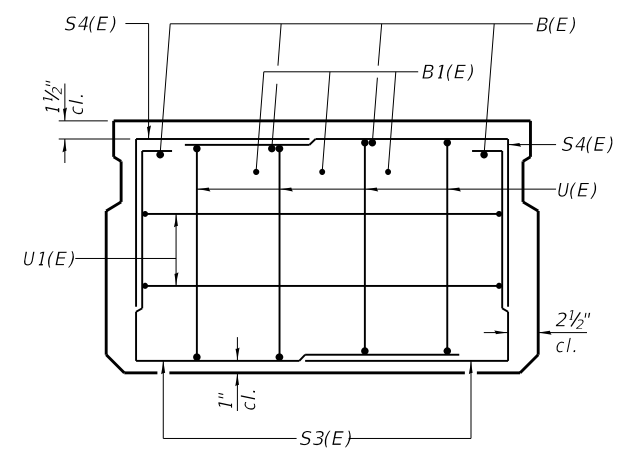
Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	2,364
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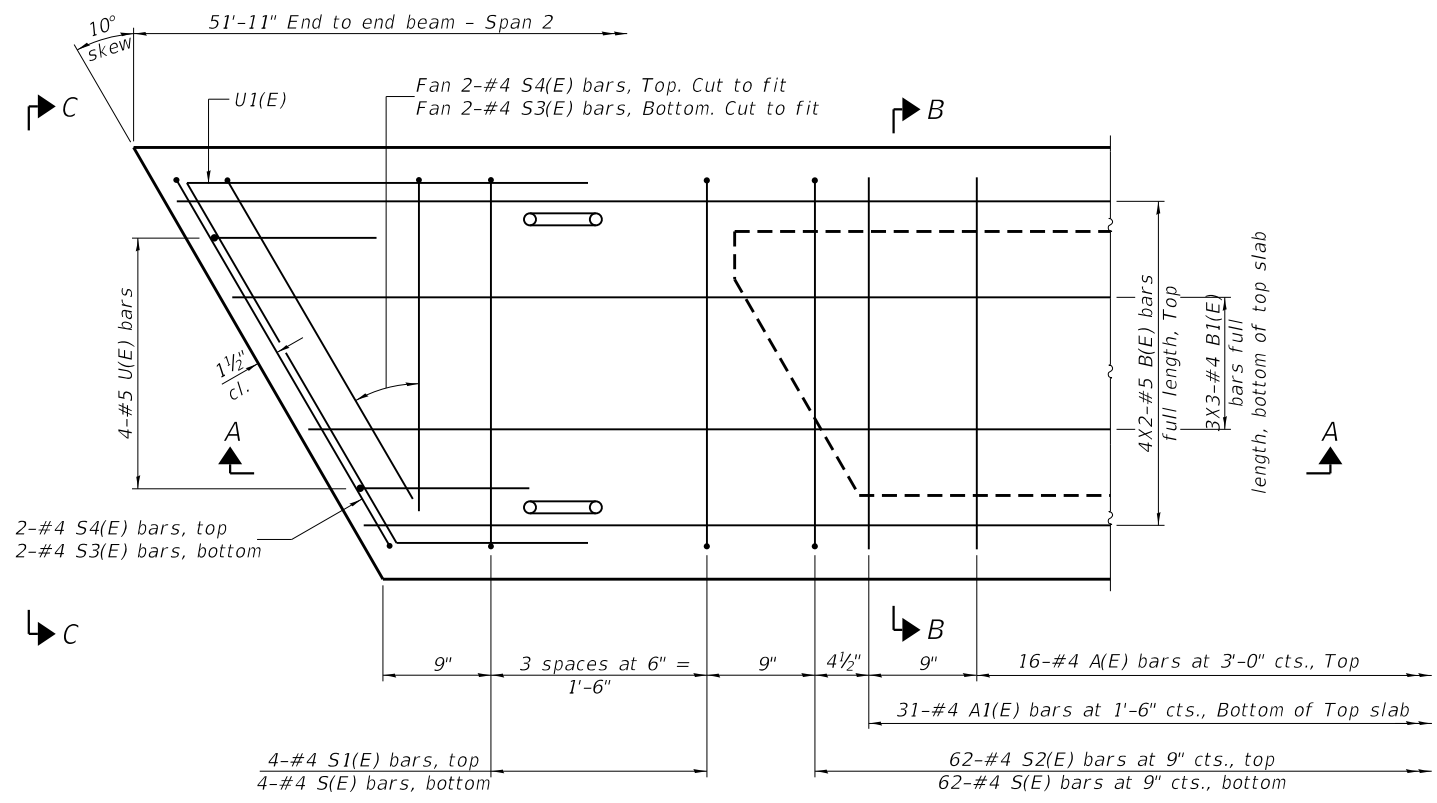
SECTION A-A



SECTION B-B  
(Showing dimensions)

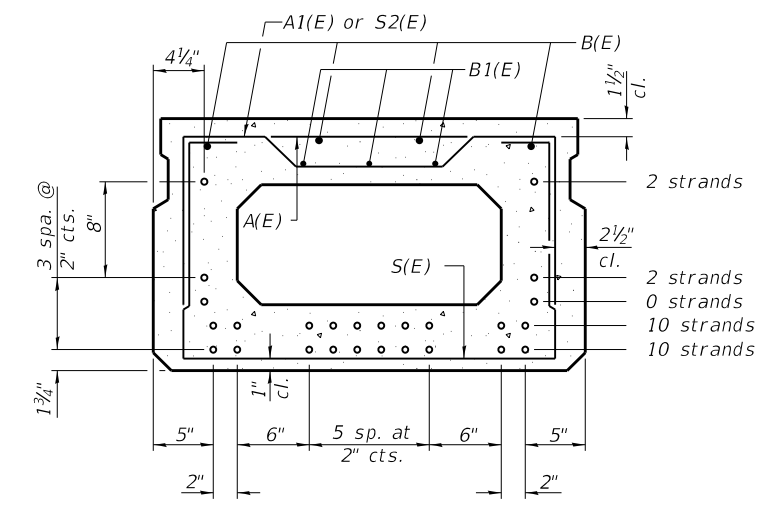


VIEW C-C



PLAN VIEW

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION B-B  
(Showing reinforcement and permissible strand locations)

24 - 1/2"Ø strands  
(10 strands 1 3/4" up, 10 strands 3 3/4" up, 2 strands 7 3/4" up, 2 strands 15 3/4" up)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST  
ONE BEAM ONLY  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	2'-7"	—
A1(E)	31	#4	2'-10"	~
B(E)	8	#5	27'-2"	—
B1(E)	9	#4	18'-7"	—
S(E)	70	#4	6'-5"	┌
S1(E)	8	#4	4'-11"	┌
S2(E)	62	#4	5'-2"	┌
S3(E)	8	#4	4'-3"	┌
S4(E)	8	#4	3'-6"	┌
U(E)	8	#5	4'-0"	┌
U1(E)	4	#4	5'-7"	┌

Note:  
See sheet 8 of 16 for additional details and Bill of Material.

MINIMUM BAR LAP  
#4 bar = 1'-11"  
#5 bar = 2'-6"

PD-2136-R 2-17-2017

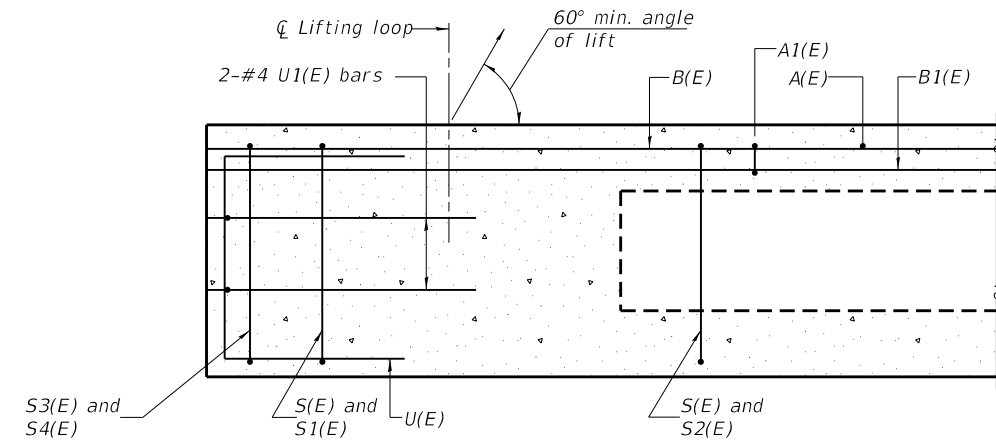
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9360 HOLY CROSS LANE  
BREESE, ILLINOIS 62230  
(618) 526-9611  
USER NAME = k1aux  
PLOT SCALE = 2.0000' / 1"  
PLOT DATE = 3/15/2019

DESIGNED - LDG  
DRAWN - KHL  
CHECKED - BGH  
DATE -  
REVISED -  
REVISED -  
REVISED -  
REVISED -

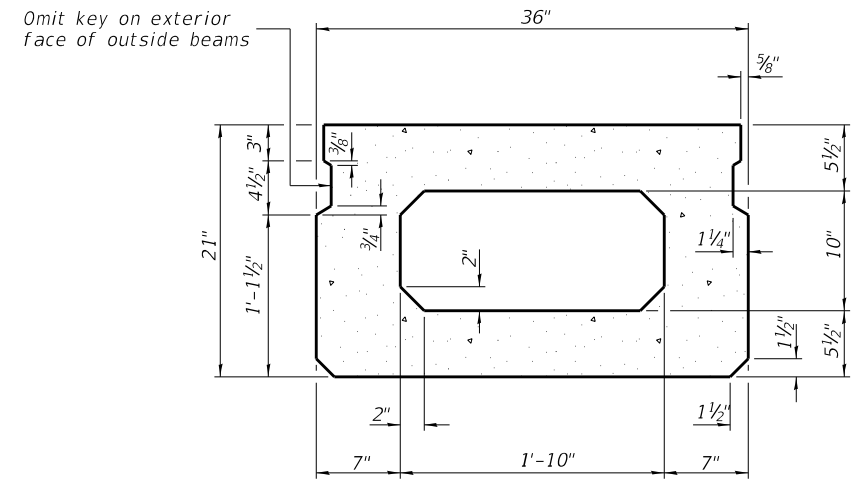
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

21" x 36" PPC DECK BEAM - SPAN 2  
STRUCTURE NO. 003-3223  
SCALE: SHEET 6 OF 16 SHEETS STA. TO STA.

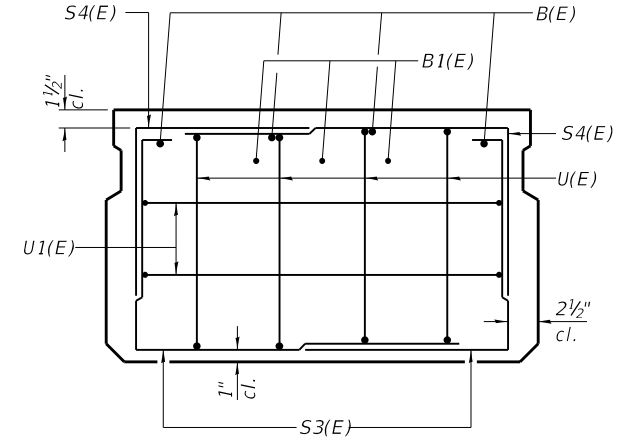
TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
RTE	08-02201-00-BR	BOND	39	21
CONTRACT NO. 97697				
ILLINOIS FED. AID PROJECT				



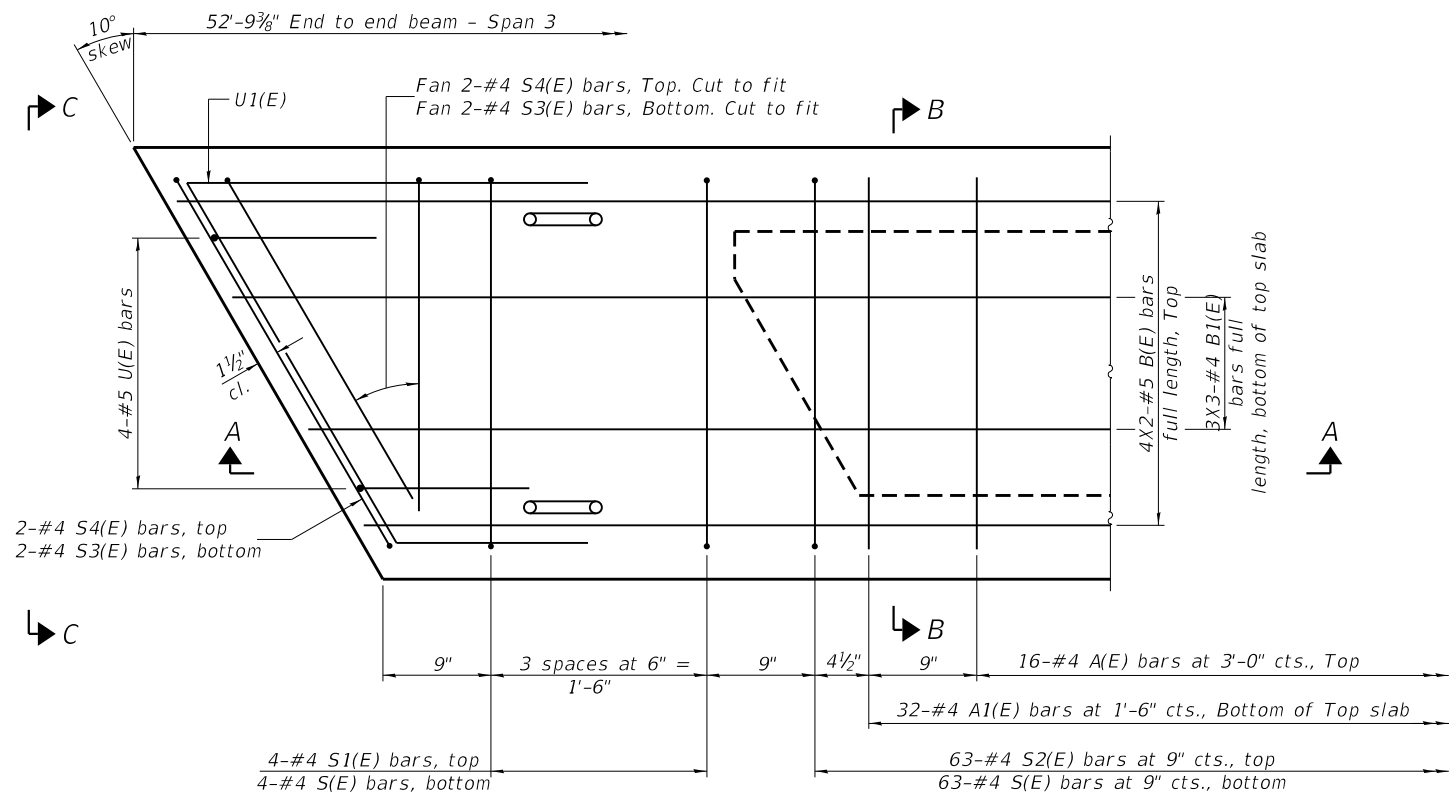
SECTION A-A



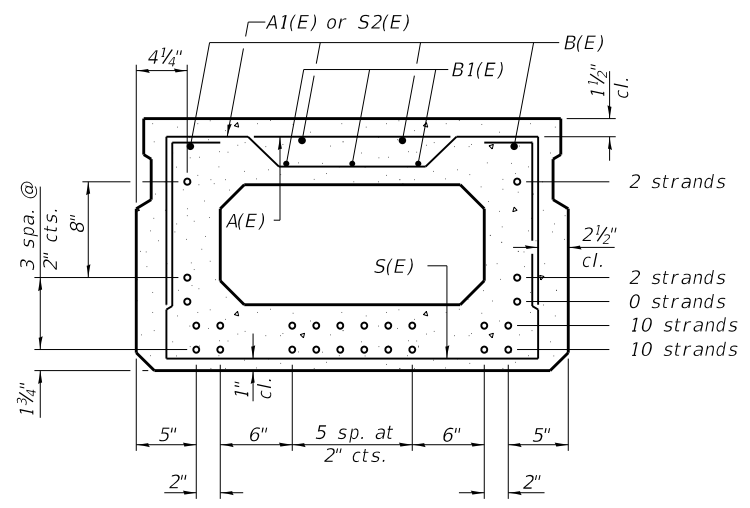
SECTION B-B  
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B  
(Showing reinforcement and permissible strand locations)

24 - 1/2"Ø strands  
(10 strands 1 3/4" up, 10 strands 3 3/4" up,  
2 strands 7 3/4" up, 2 strands 15 3/4" up)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST  
ONE BEAM ONLY  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	2'-7"	—
A1(E)	32	#4	2'-10"	~
B(E)	8	#5	27'-7"	—
B1(E)	9	#4	18'-10"	—
S(E)	71	#4	6'-5"	┌
S1(E)	8	#4	4'-11"	┌
S2(E)	63	#4	5'-2"	┌
S3(E)	8	#4	4'-3"	┌
S4(E)	8	#4	3'-6"	┌
U(E)	8	#5	4'-0"	┌
U1(E)	4	#4	5'-7"	┌

Note:  
See sheet 8 of 16 for additional details and Bill of Material.

MINIMUM BAR LAP  
#4 bar = 1'-11"  
#5 bar = 2'-6"

PD-2136-R 2-17-2017

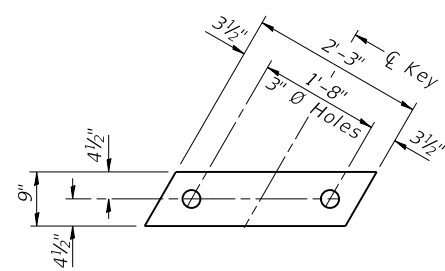
FILE NAME = H:\6184\CADD\_Sheets\6184\_Sht.22\_Bridge\_07\_21BmSp3.dgn  
HMG ENGINEERS, INC.  
9360 HOLY CROSS LANE  
BREESE, ILLINOIS 62230  
(618) 526-9611  
USER NAME = k.laux  
PLOT SCALE = 2.0000' / 1"  
PLOT DATE = 3/15/2019

DESIGNED - LDG  
DRAWN - KHL  
CHECKED - BGH  
DATE -  
REVISED -  
REVISED -  
REVISED -  
REVISED -

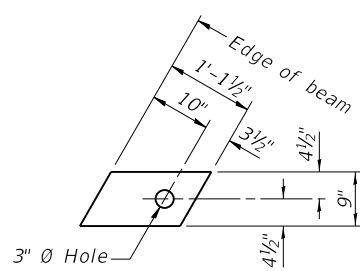
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

21" x 36" PPC DECK BEAM - SPAN 3  
STRUCTURE NO. 003-3223  
SCALE: SHEET 7 OF 16 SHEETS STA. TO STA.

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	22
CONTRACT NO. 97697				
ILLINOIS FED. AID PROJECT				



**FABRIC BEARING PAD**  
(Interior)

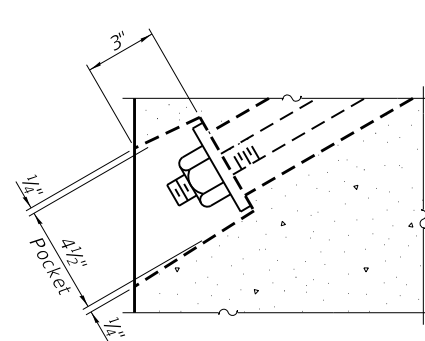


**FABRIC BEARING PAD**  
(Exterior)

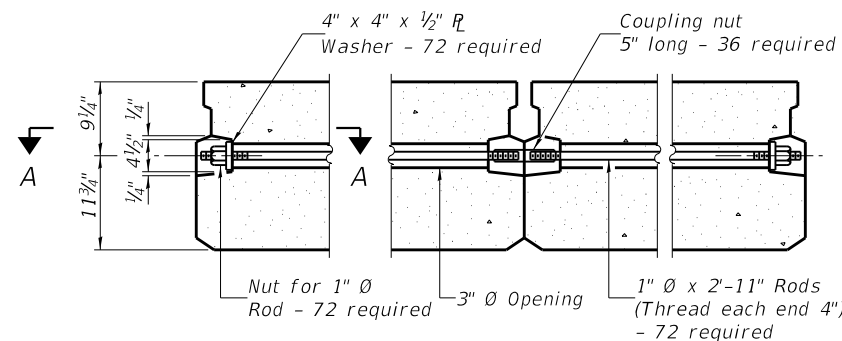
**FIXED**

Notes:

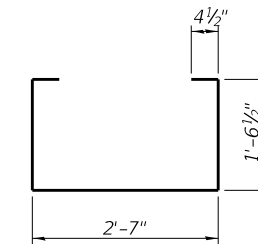
- All bearing pads shall be 1" thick.
- Omit holes when using expansion bearings.
- Expansion bearing pad shall be bonded to the substructure.



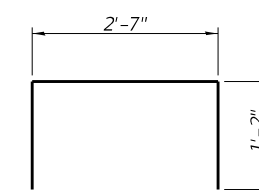
**SECTION A-A**



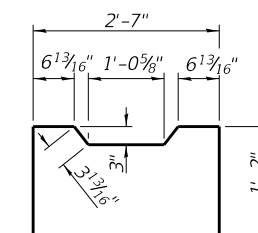
**TYPICAL TRANSVERSE TIE ASSEMBLY**



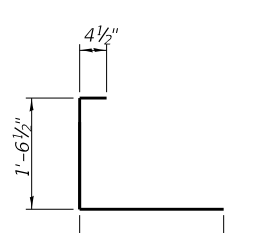
**BAR S(E)**



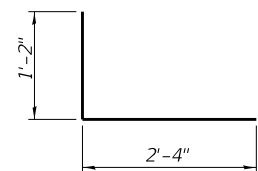
**BAR S1(E)**



**BAR S2(E)**



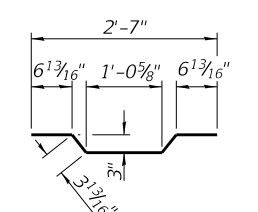
**BAR S3(E)**



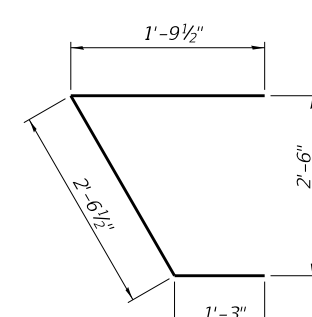
**BAR S4(E)**



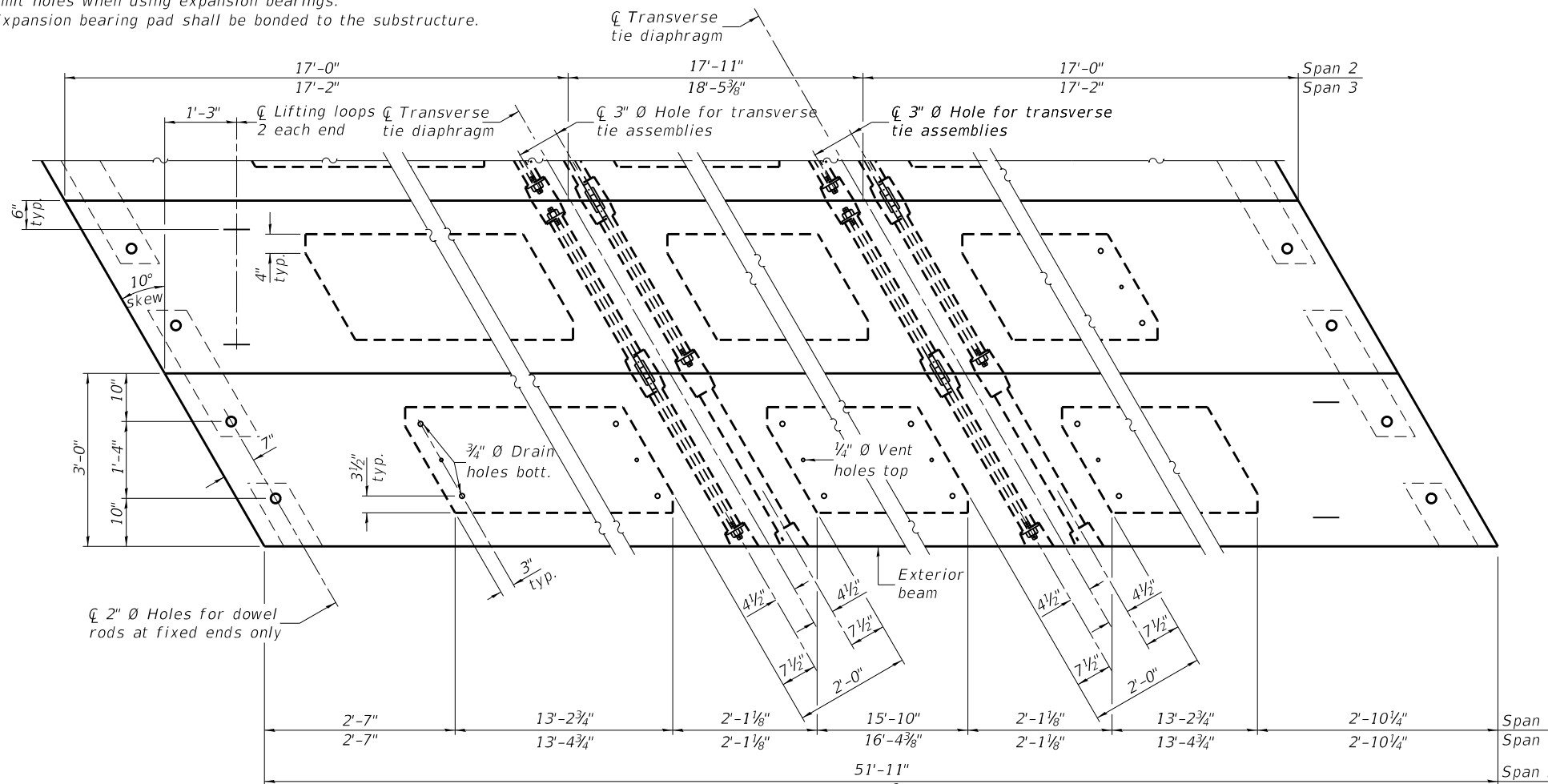
**BAR U(E)**



**BAR A1(E)**



**BAR U1(E)**

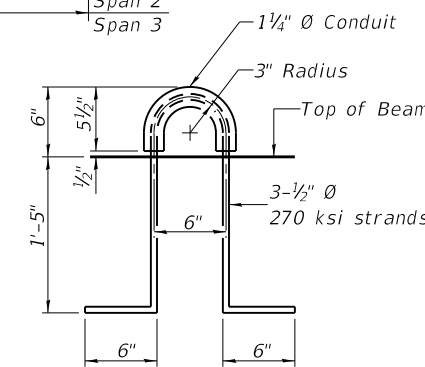


**PLAN VIEW**

**NOTES**

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
- Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.
- Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete, f'c, shall be 7,000 psi.
- Compressive strength of prestressed concrete at release, f'ci, shall be 6,000 psi.

Note: Connect beams in pairs with the transverse tie configuration shown.

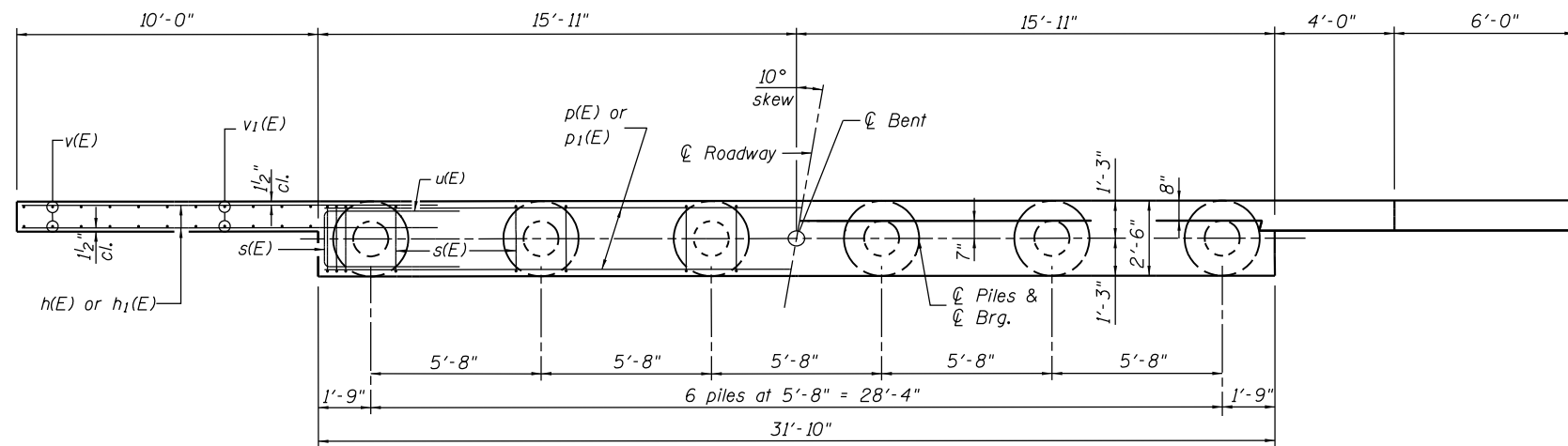


**LIFTING LOOP DETAIL**

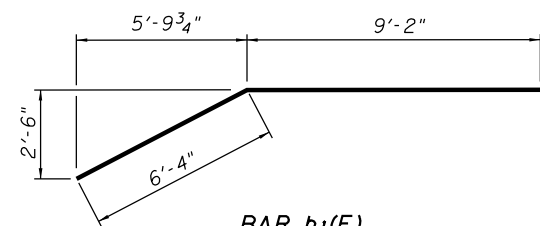
**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	3,141
---	---------	-------

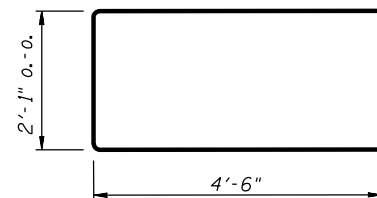




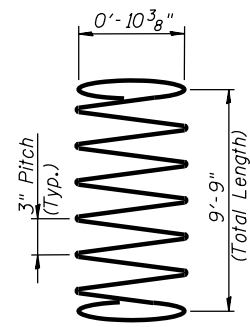
PLAN



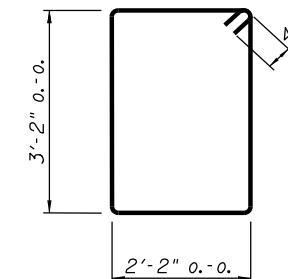
BAR  $h_1(E)$



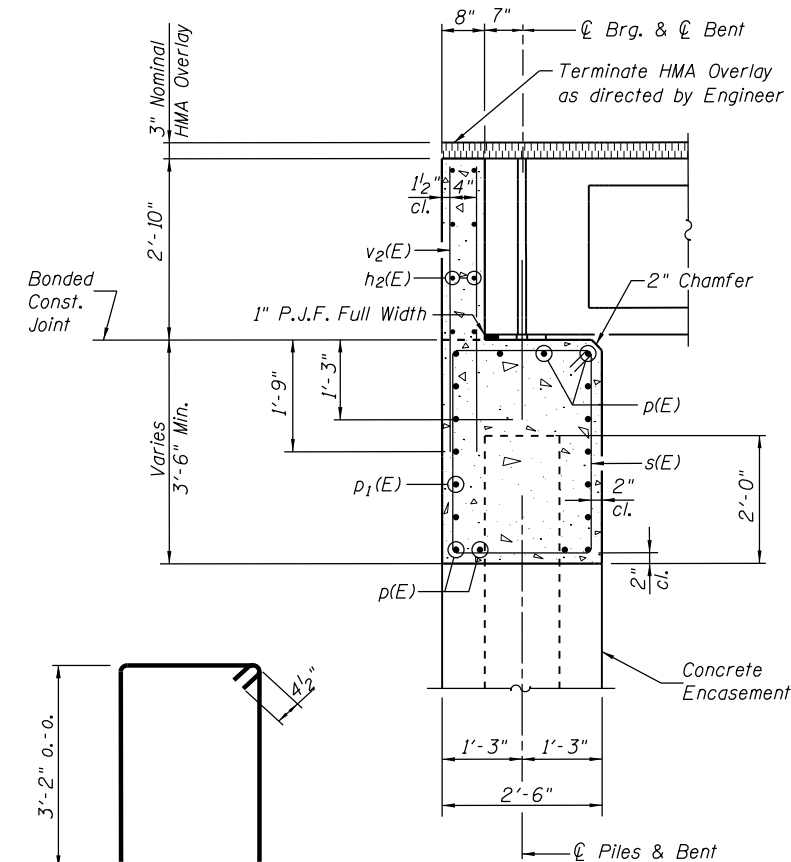
BAR  $u(E)$



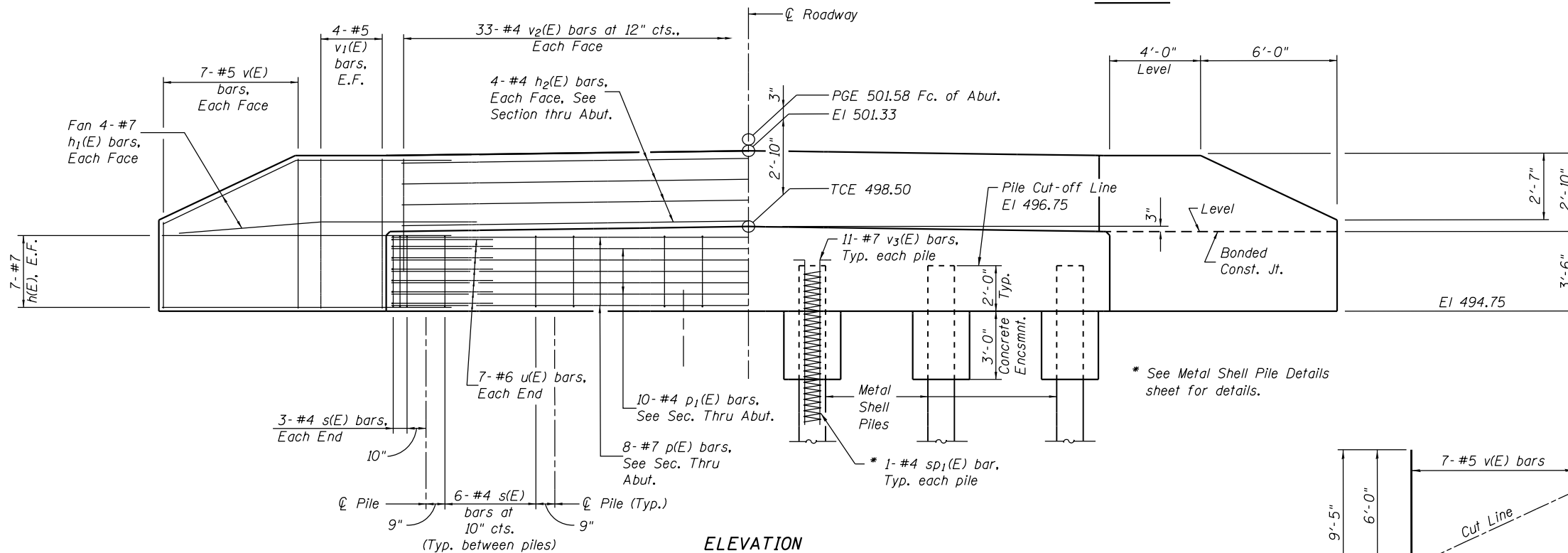
BAR  $sp_1(E)$   
Min. Lap Spiral Splice = 2'-6"



BAR  $s(E)$



SECTION THRU ABUTMENT  
(at Right Angles)

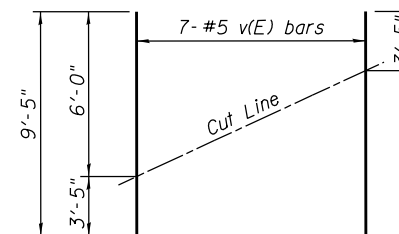


ELEVATION

PILE DATA

SOUTH ABUTMENT

Type: Steel MS 14" x 0.312" w/Pile Shoes  
 Nominal Required Bearing: 425 k  
 Factored Resistance Available: 234 k  
 Est. Length: 46 ft.  
 No. Production Piles: 5  
 No. Test Piles: 1



FIELD CUTTING DIAGRAM

Order  $v(E)$  bars full length. Cut as shown and use remainder of bars in opposite face.

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
$h(E)$	28	#7	15'-0"	—
$h_1(E)$	16	#7	15'-6"	—
$h_2(E)$	8	#4	31'-10"	—
$p(E)$	8	#7	31'-6"	—
$p_1(E)$	10	#4	31'-6"	—
$s(E)$	36	#4	11'-5"	□
$sp_1(E)$	6	#4	9'-9"	⌀
$u(E)$	14	#6	11'-1"	□
$v(E)$	14	#5	9'-5"	—
$v_1(E)$	16	#5	6'-0"	—
$v_2(E)$	66	#4	4'-6"	—
$v_3(E)$	66	#7	10'-6"	—
Concrete Structures		Cu Yd	17.1	
Concrete Encasement		Cu Yd	2.6	
*** Reinforcement Bars, Epoxy Coated		Pound	5,210	
Furnishing Steel Pile MS14x0.312		Foot	230	
Driving Piles		Foot	230	
Test Pile Metal Shell		Each	1	
Pile Shoes		Each	6	

\*\* Length is total height of spirals.  
 \*\*\* Weight includes spacers for spirals.

NOTES

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beams.
- Space reinforcement in cap to miss dowel rods.

FILE NAME = H:\6184\CADD\_Sheets\6184\_Sht\_24\_Bridge\_09\_sabut.dgn  
 HMG ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611  
 USER NAME = k.laux  
 PLOT SCALE = 6.0000' / 1"  
 PLOT DATE = 3/15/2019

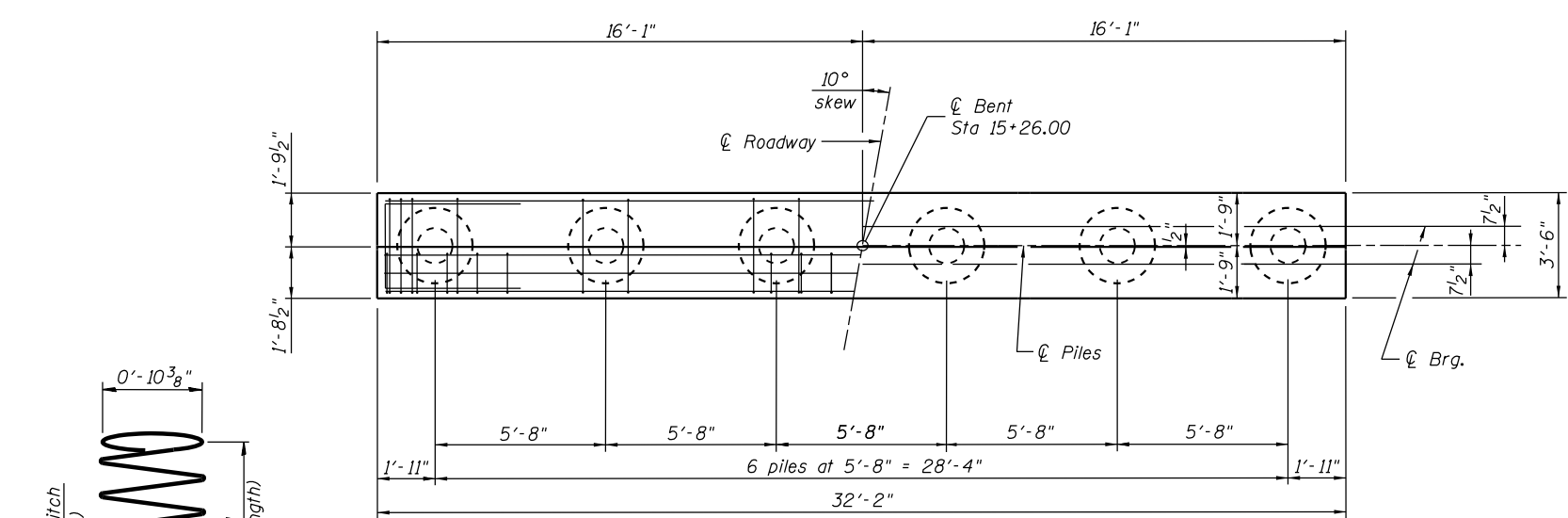
DESIGNED - LDG  
 DRAWN - KHL  
 CHECKED - BGH  
 DATE -  
 REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

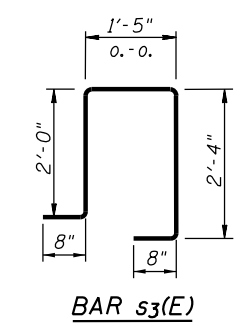
SOUTH PILE BENT ABUTMENT  
 STRUCTURE NO. 003-3223

SCALE: SHEET 9 OF 16 SHEETS STA. TO STA.

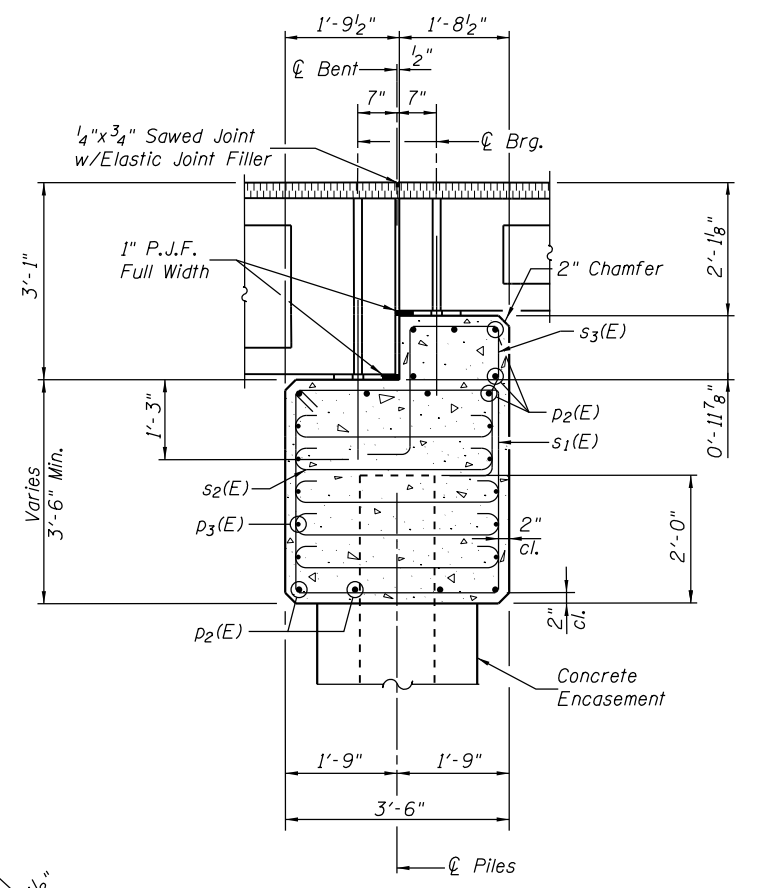
TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	24
CONTRACT NO. 97697				
ILLINOIS FED. AID PROJECT				



**PLAN**



**BAR s<sub>3</sub>(E)**

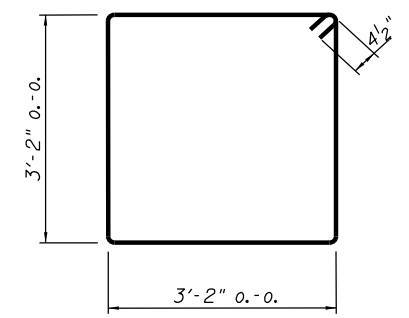


**SECTION THRU PIER  
(at Right Angles)**

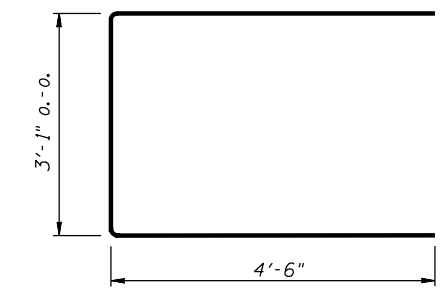
**PILE DATA**

**PIER 1**

Type:	Steel MS 14" x 0.312" w/Pile Shoes
Nominal Required Bearing:	425 k
Factored Resistance Available:	234 k
Est. Length:	47 ft.
No. Production Piles:	5
No. Test Piles:	1



**BAR s<sub>1</sub>(E)**



**BAR u<sub>1</sub>(E)**

**BILL OF MATERIAL  
FOR ONE PIER**

Bar	No.	Size	Length	Shape
p <sub>2</sub> (E)	8	#7	31'-10"	—
p <sub>3</sub> (E)	10	#4	31'-10"	—
s <sub>1</sub> (E)	36	#4	13'-5"	□
s <sub>2</sub> (E)	85	#4	4'-2"	U
s <sub>3</sub> (E)	33	#4	7'-1"	J
sp <sub>2</sub> (E)	6	#4	17'-9"	W
u <sub>1</sub> (E)	14	#6	12'-1"	U
v <sub>11</sub> (E)	66	#7	18'-6"	—
Concrete Structures			Cu Yd	17.2
Concrete Encasement			Cu Yd	10.4
*** Reinforcement Bars, Epoxy Coated			Pound	5,260
Furnishing Steel Pile MS14x0.312			Foot	235
Driving Piles			Foot	235
Test Pile Metal Shell			Each	1
Pile Shoes			Each	6

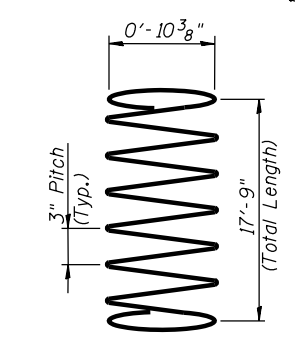
\*\*

\*\*\*

\*\* Length is total height of spirals.  
\*\*\* Weight includes spacers for spirals.

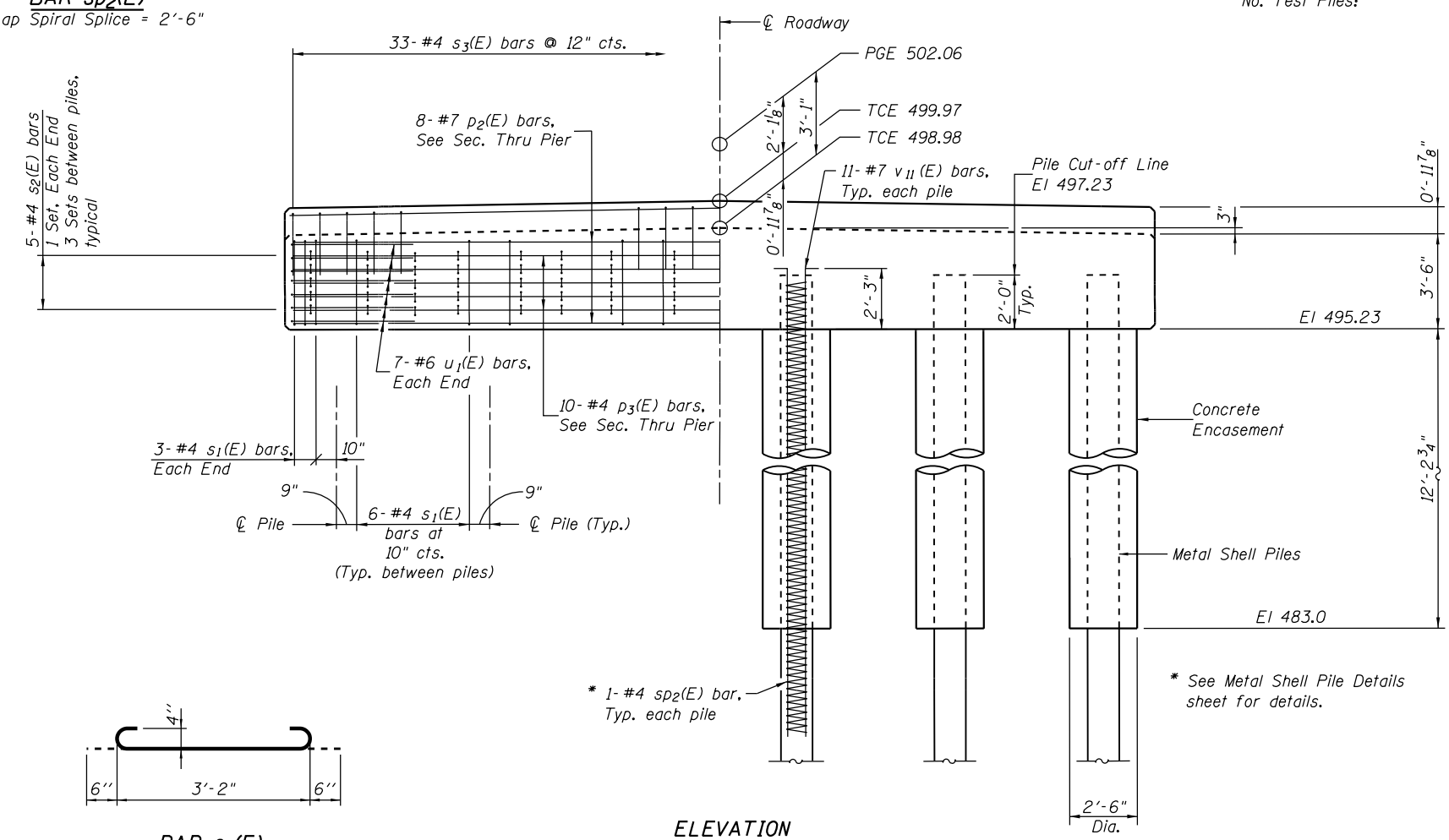
**Notes:**  
For details of piles and concrete encasement see sheet 14 of 16.  
Space reinforcement in pile cap to miss dowel rods.  
If a portion of the concrete encasement is under water, reinforcement may be placed under water into forms.  
Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

**BAR sp<sub>2</sub>(E)**  
Min. Lap Spiral Splice = 2'-6"

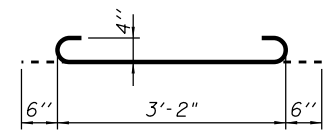


**BAR sp<sub>2</sub>(E)**

Min. Lap Spiral Splice = 2'-6"

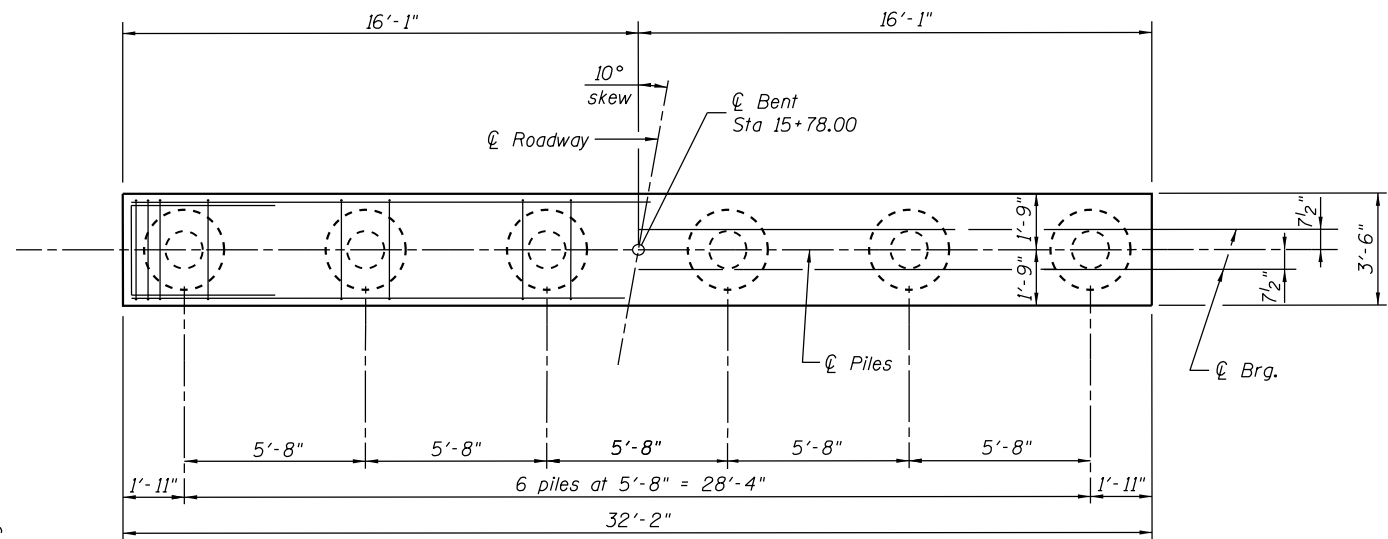


**ELEVATION**

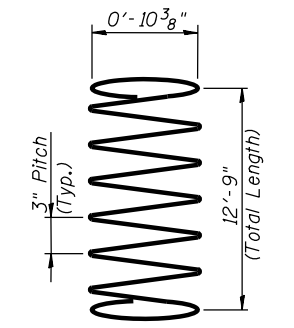


**BAR s<sub>2</sub>(E)**

\* See Metal Shell Pile Details sheet for details.



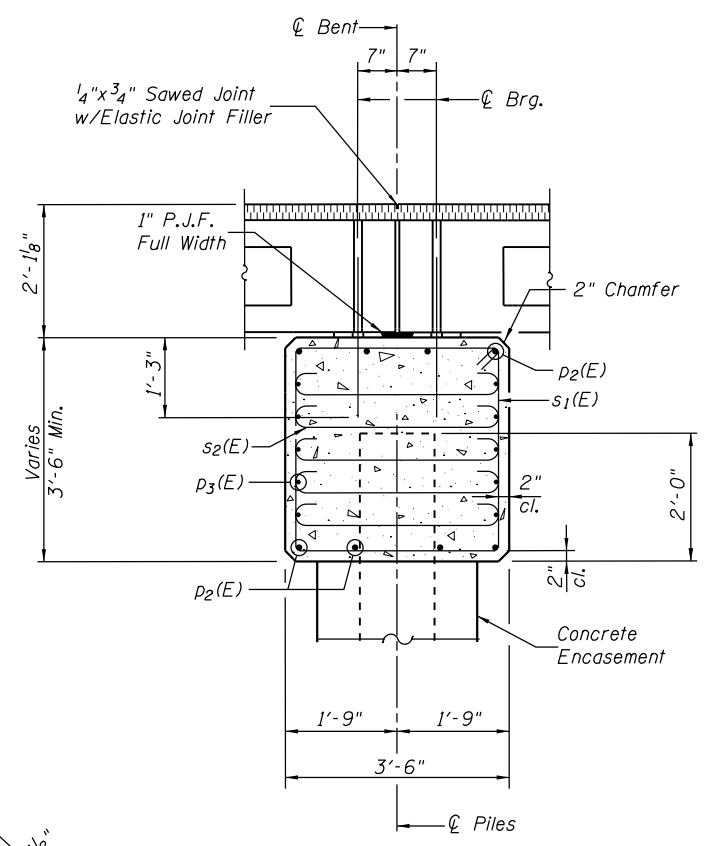
**PLAN**



**BAR  $sp_3(E)$**   
Min. Lap Spiral Splice = 2'-6"

**PILE DATA**

PIER 2	
Type:	Steel MS 14" x 0.312" w/Pile Shoes
Nominal Required Bearing:	425 k
Factored Resistance Available:	234 k
Est. Length:	47 ft.
No. Production Piles:	5
No. Test Piles:	1

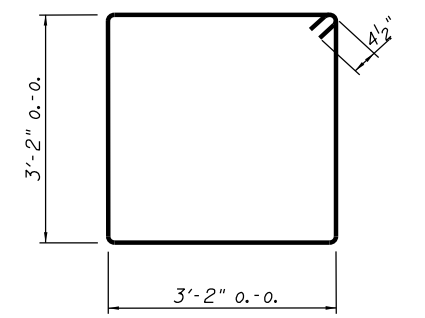


**SECTION THRU PIER**  
(at Right Angles)

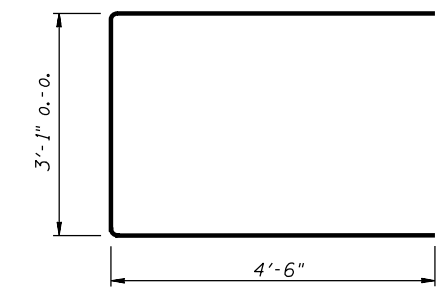
**BILL OF MATERIAL FOR ONE PIER**

Bar	No.	Size	Length	Shape
$p_2(E)$	8	#7	31'-10"	—
$p_3(E)$	10	#4	31'-10"	—
$s_1(E)$	36	#4	13'-5"	□
$s_2(E)$	85	#4	4'-2"	U
$sp_3(E)$	6	#4	12'-9"	W
$u_1(E)$	14	#6	12'-1"	□
$v_2(E)$	66	#7	13'-6"	—
Concrete Structures			Cu Yd	15.1
Concrete Encasement			Cu Yd	6.3
Reinforcement Bars, Epoxy Coated			Pound	4,130
Furnishing Steel Pile MS14x0.312			Foot	235
Driving Piles			Foot	235
Test Pile Metal Shell			Each	1
Pile Shoes			Each	6

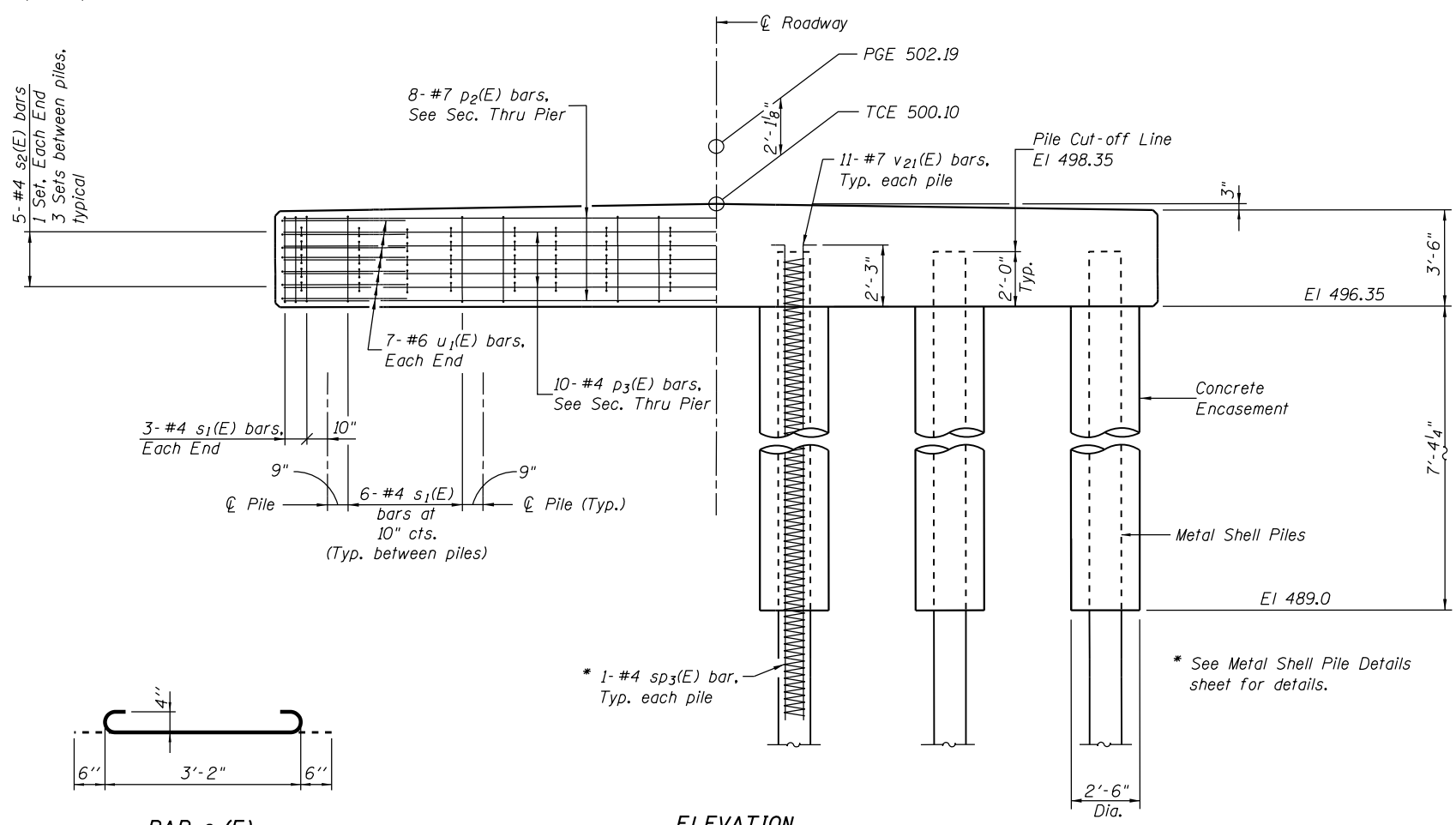
\*\* Length is total height of spirals.  
\*\*\* Weight includes spacers for spirals.



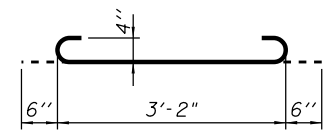
**BAR  $s_1(E)$**



**BAR  $u_1(E)$**

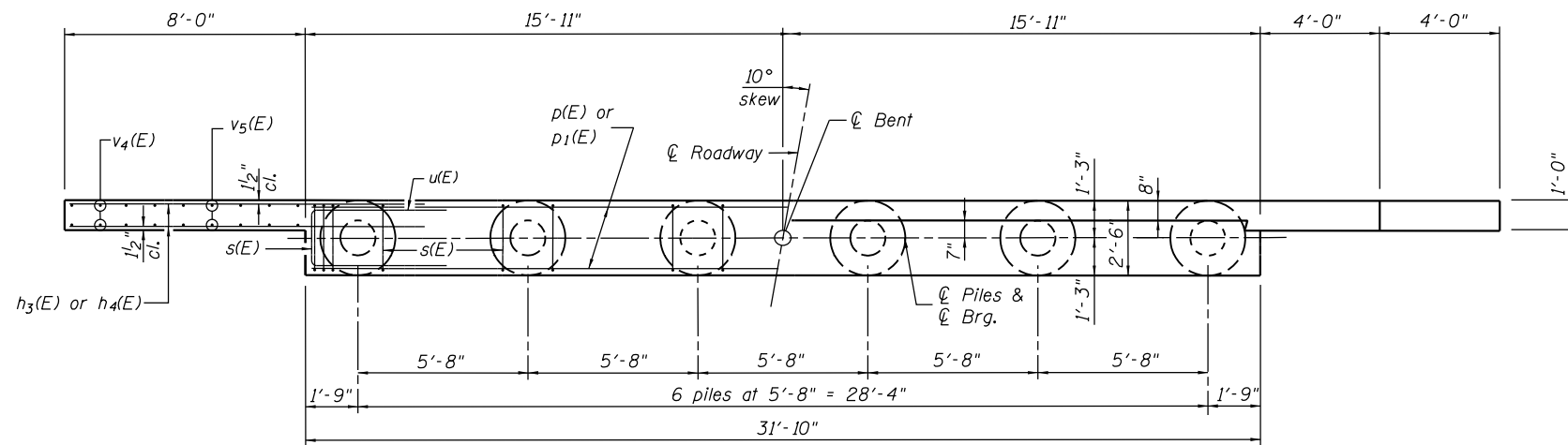


**ELEVATION**

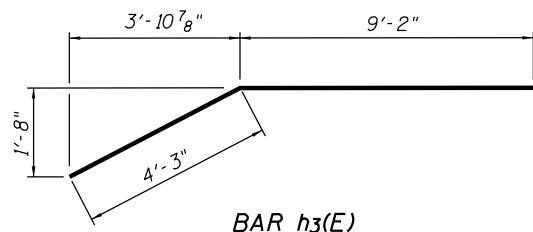


**BAR  $s_2(E)$**

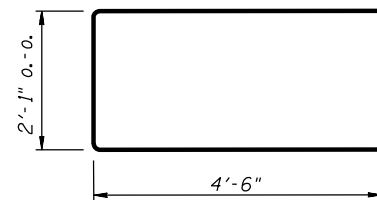
**Notes:**  
For details of piles and concrete encasement see sheet 14 of 16.  
Space reinforcement in pile cap to miss dowel rods.  
If a portion of the concrete encasement is under water, reinforcement may be placed under water into forms.  
Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.



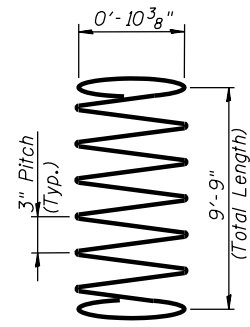
PLAN



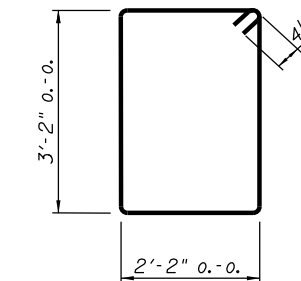
BAR h3(E)



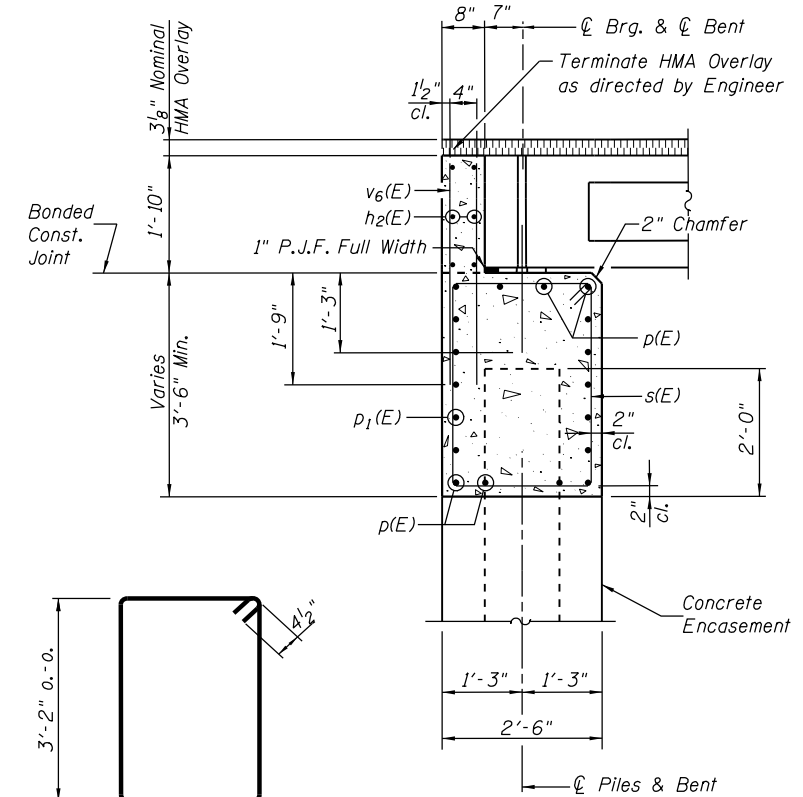
BAR u(E)



BAR sp1(E)  
Min. Lap Spiral Splice = 2'-6"



BAR s(E)

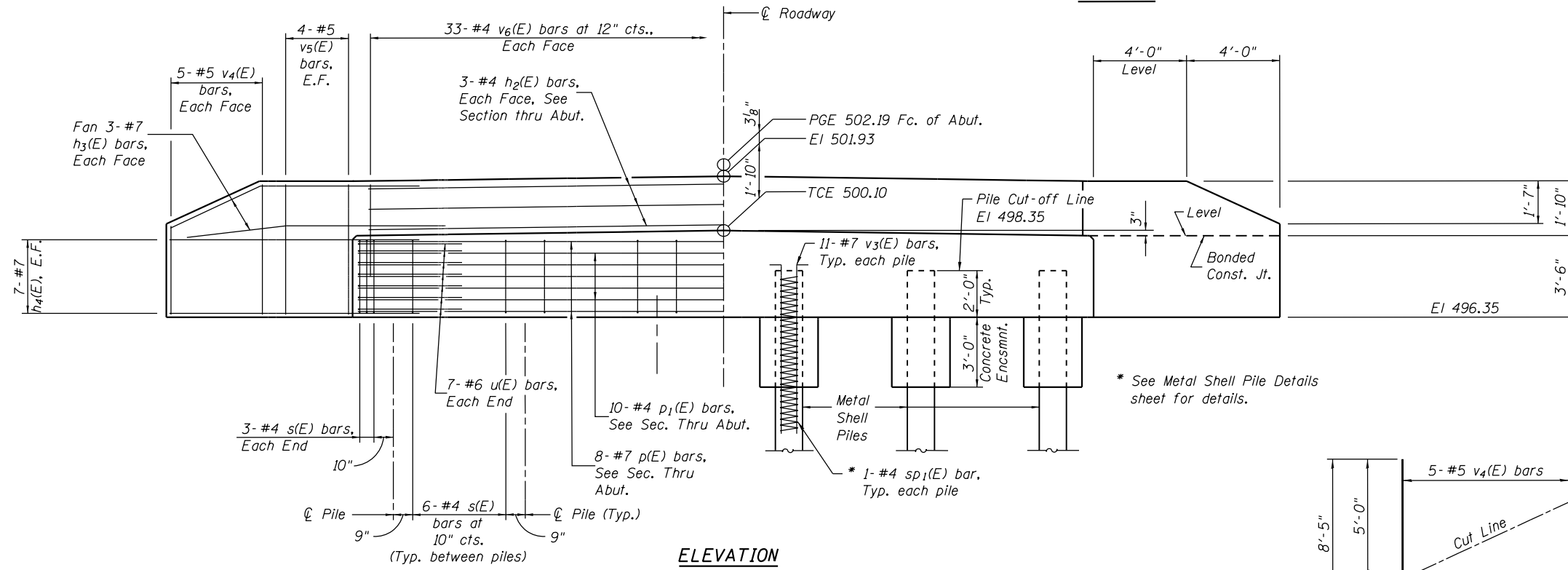


SECTION THRU ABUTMENT  
(at Right Angles)

BILL OF MATERIAL  
FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h2(E)	6	#4	31'-10"	—
h3(E)	12	#7	13'-5"	—
h4(E)	28	#7	13'-0"	—
p(E)	8	#7	31'-6"	—
p1(E)	10	#4	31'-6"	—
s(E)	36	#4	11'-5"	□
sp1(E)	6	#4	9'-9"	⊘
u(E)	14	#6	11'-1"	□
v3(E)	66	#7	10'-6"	—
v4(E)	10	#5	8'-5"	—
v5(E)	16	#5	5'-0"	—
v6(E)	66	#4	3'-5"	—
Concrete Structures			Cu Yd	15.1
Concrete Encasement			Cu Yd	2.6
*** Reinforcement Bars, Epoxy Coated			Pound	4,760
Furnishing Steel Pile MS14x0.312			Foot	240
Driving Piles			Foot	240
Test Pile Metal Shell			Each	1
Pile Shoes			Each	6

\*\* Length is total height of spirals.  
\*\*\* Weight includes spacers for spirals.

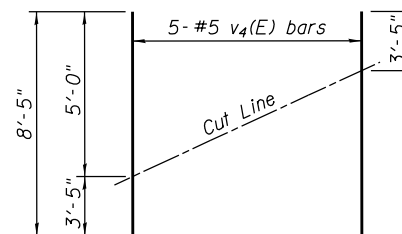


ELEVATION

PILE DATA

NORTH ABUTMENT

Type: Steel MS 14" x 0.312" w/Pile Shoes  
Nominal Required Bearing: 425 k  
Factored Resistance Available: 234 k  
Est. Length: 48 ft.  
No. Production Piles: 5  
No. Test Piles: 1



FIELD CUTTING DIAGRAM

Order v4(E) bars full length. Cut as shown and use remainder of bars in opposite face.

NOTES

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beams.
- Space reinforcement in cap to miss dowel rods.

FILE NAME = H:\6184\CADD\_Sheets\6184\_Sht.27\_Bridge.12\_nabut.dgn  
HMG ENGINEERS, INC.  
9360 HOLY CROSS LANE  
BREESE, ILLINOIS 62230  
(618) 526-9611

DESIGNED - LDG  
DRAWN - KHL  
CHECKED - BGH  
DATE -  
REVISED -  
REVISED -  
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REVISED -

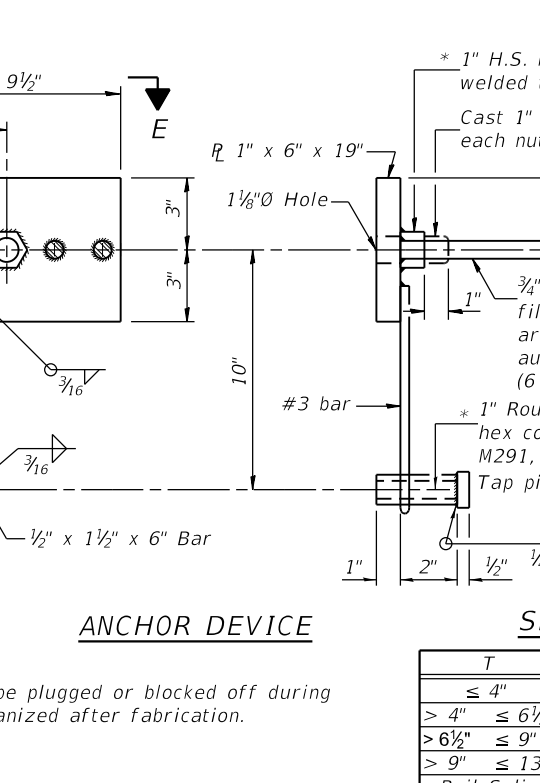
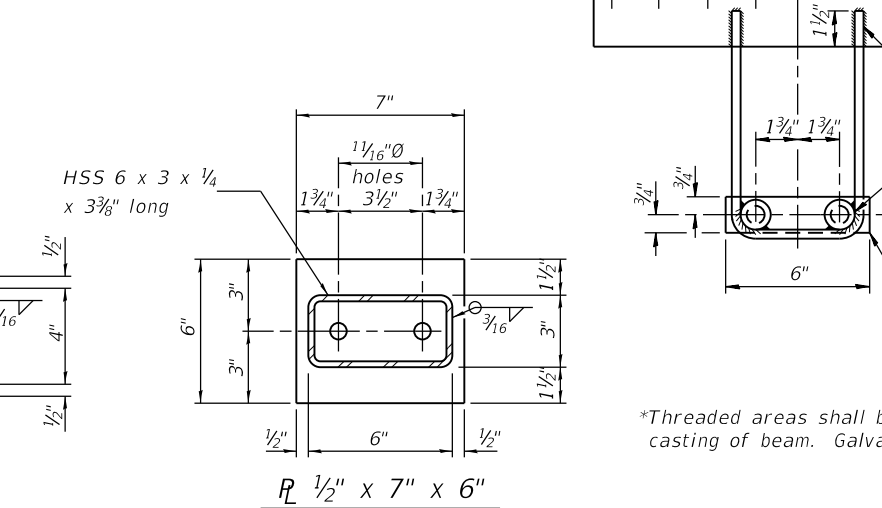
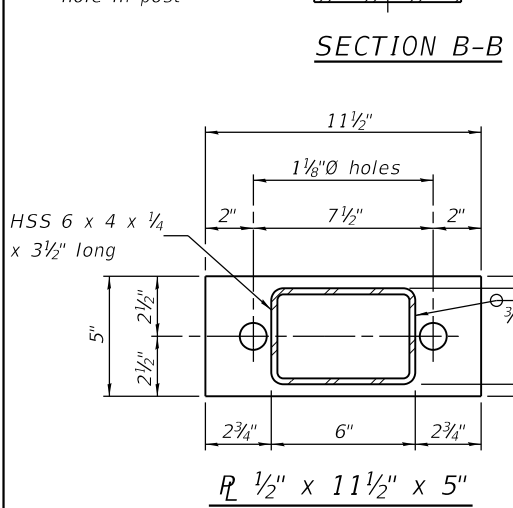
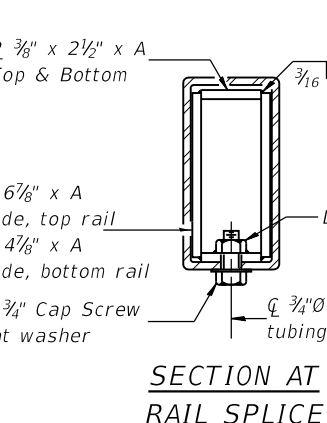
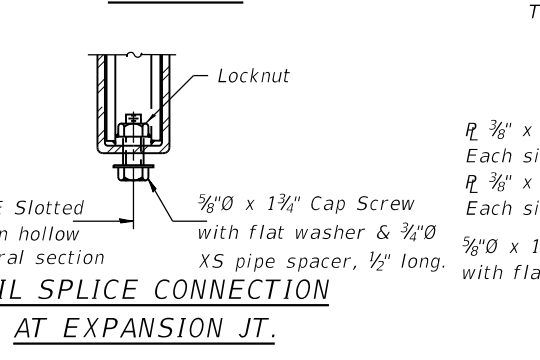
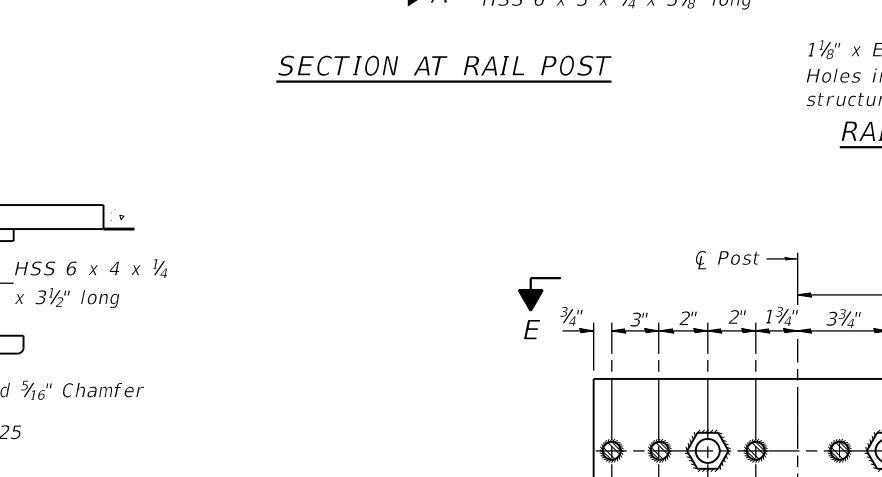
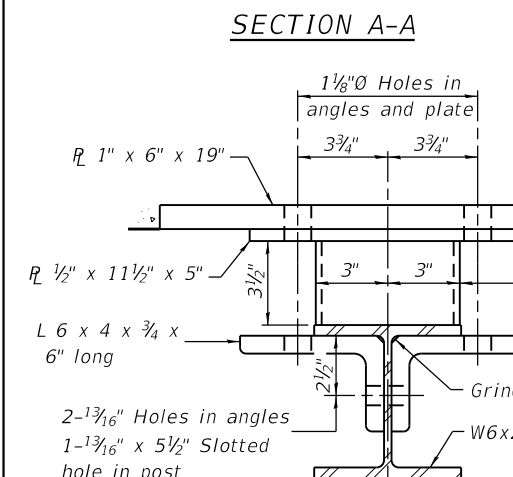
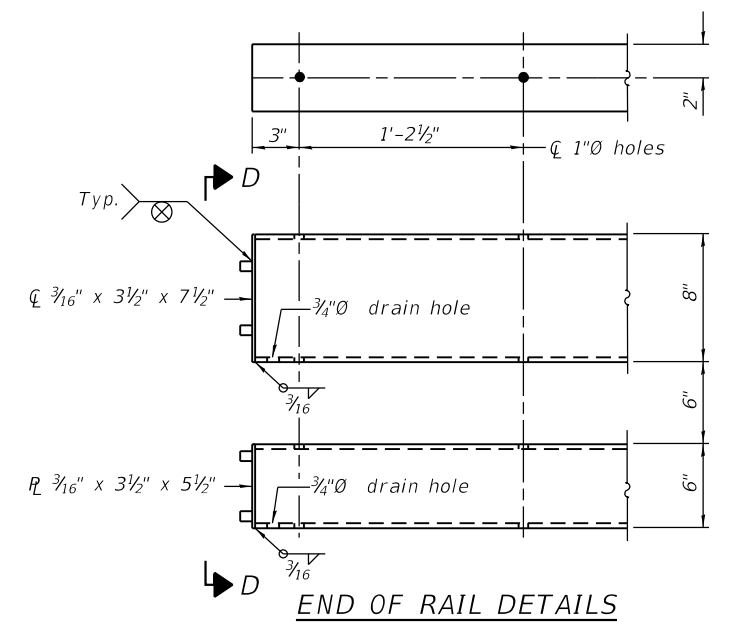
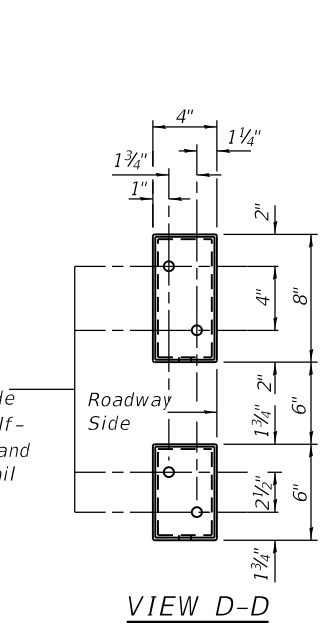
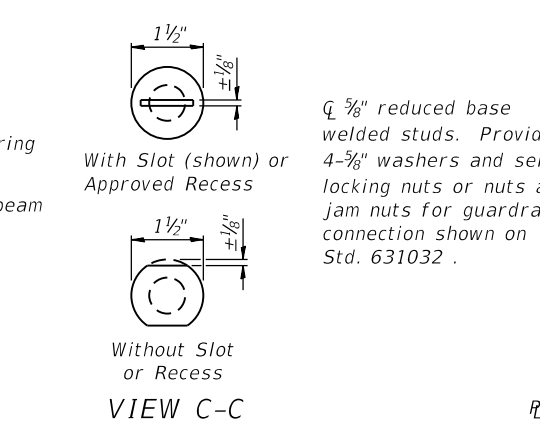
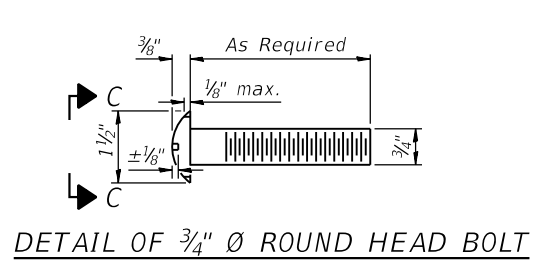
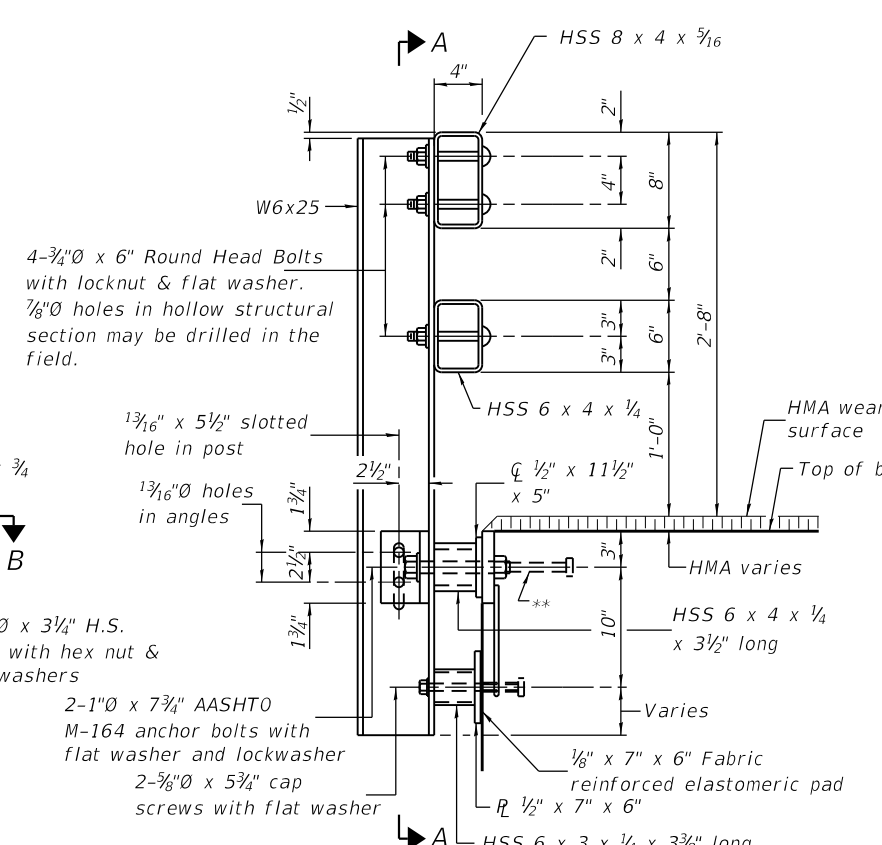
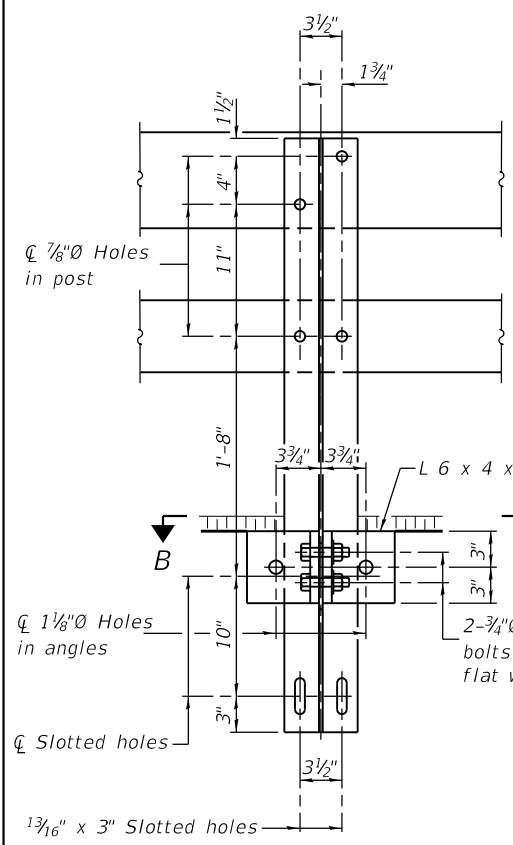
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

NORTH PILE BENT ABUTMENT  
STRUCTURE NO. 003-3223

SCALE: SHEET 12 OF 16 SHEETS STA. TO STA.

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	27
CONTRACT NO. 97697				

ILLINOIS FED. AID PROJECT



SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	

T = Total movement at expansion joint as shown on the design plans.

Notes:

For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.

All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.

\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	370

R-34HMAWS 2-17-2017 (6'-3" Maximum Post Spacing) (1/4" minimum to 3/8" maximum HMA thickness)

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 HMG ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611

DESIGNED - LDG  
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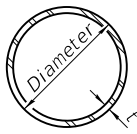
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE SM WITH HOT-MIX ASPHALT WEARING SURFACE  
 STRUCTURE NO. 003-3223

SCALE: SHEET 13 OF 16 SHEETS STA. TO STA.

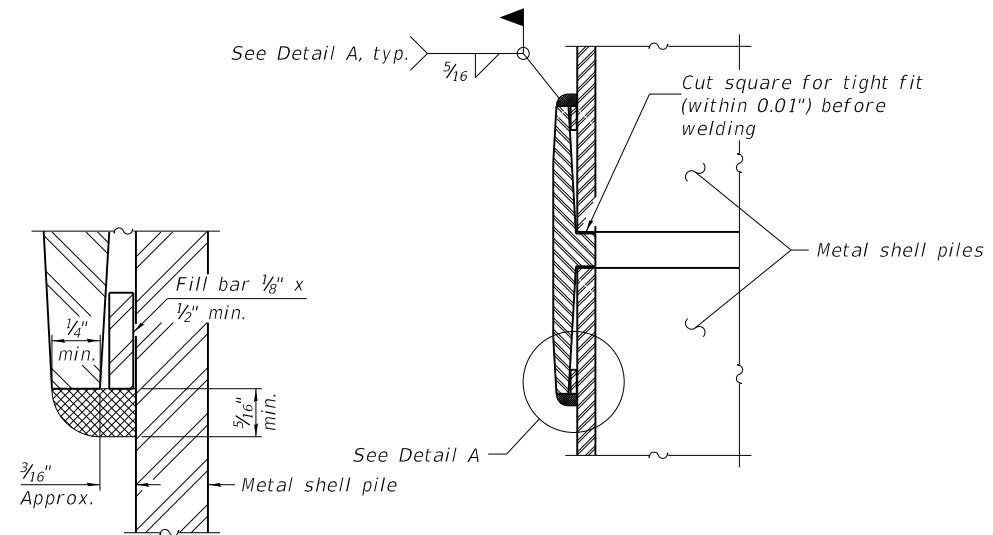
TR RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	28

CONTRACT NO. 97697  
 ILLINOIS FED. AID PROJECT

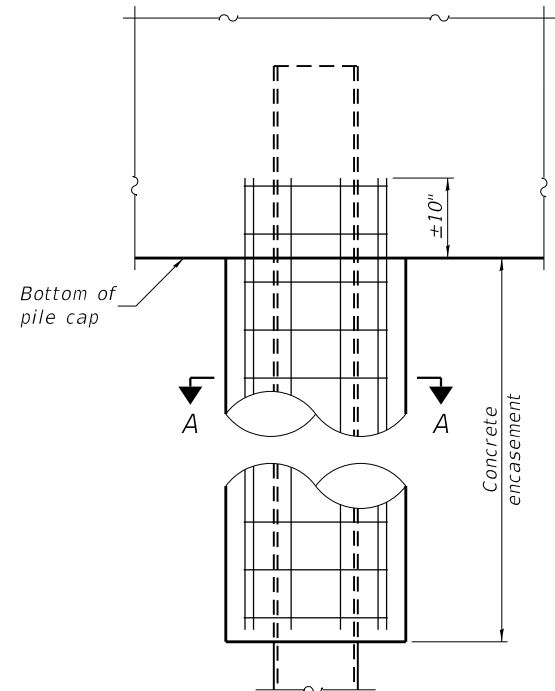


**METAL SHELL PILE TABLE**

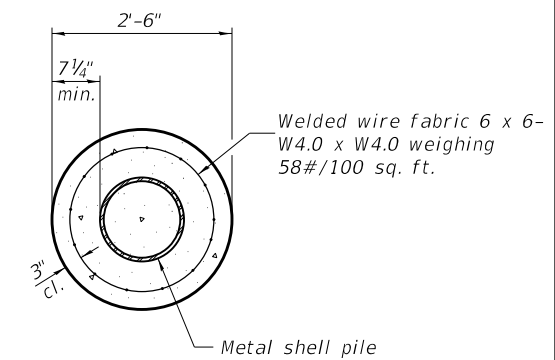
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. <sup>3</sup> /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



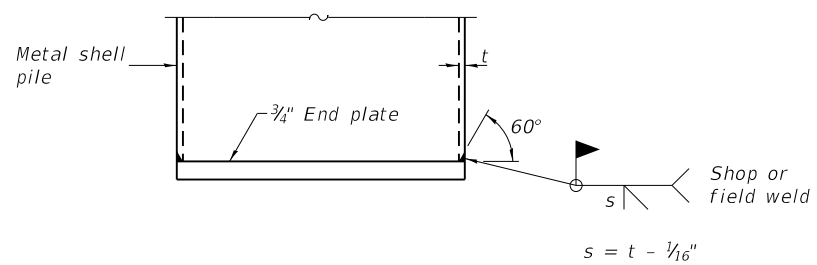
**DETAIL A**



**ELEVATION**



**SECTION A-A**

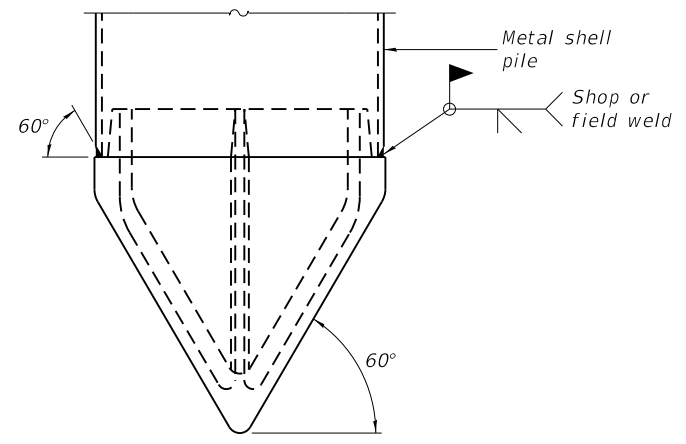


**END PLATE ATTACHMENT**

**WELDED COMMERCIAL SPLICE**

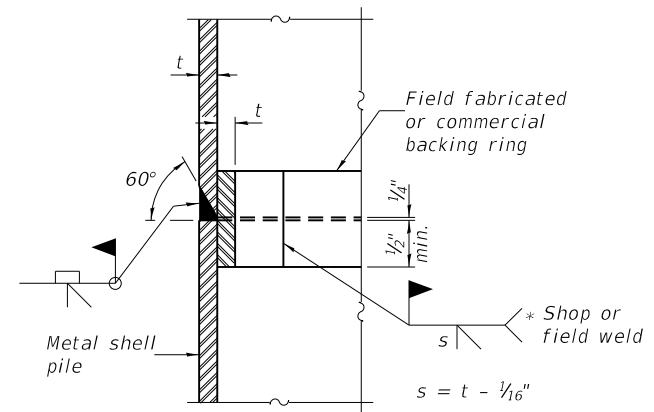
Notes:  
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.  
 Pile segments shall be driven to solid contact with splicer before welding.

**INDIVIDUAL PILE CONCRETE ENCASEMENT AT PIERS**



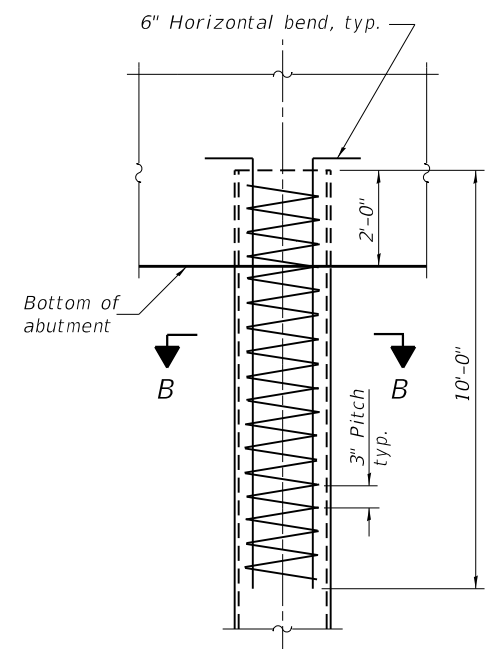
**PILE SHOE ATTACHMENT**

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).

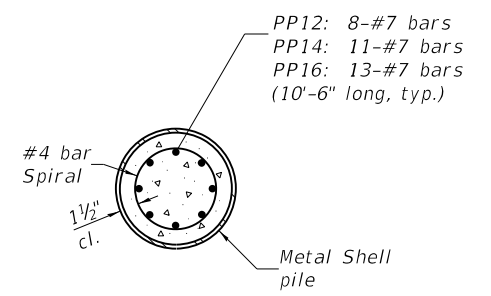


**COMPLETE PENETRATION WELD SPLICE**

\* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



**ELEVATION**



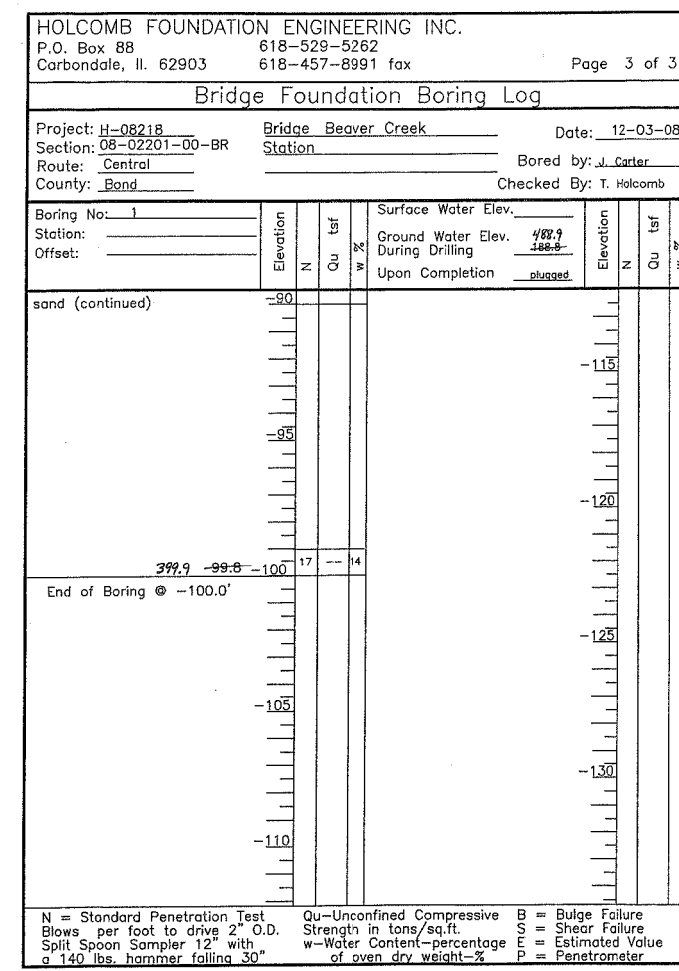
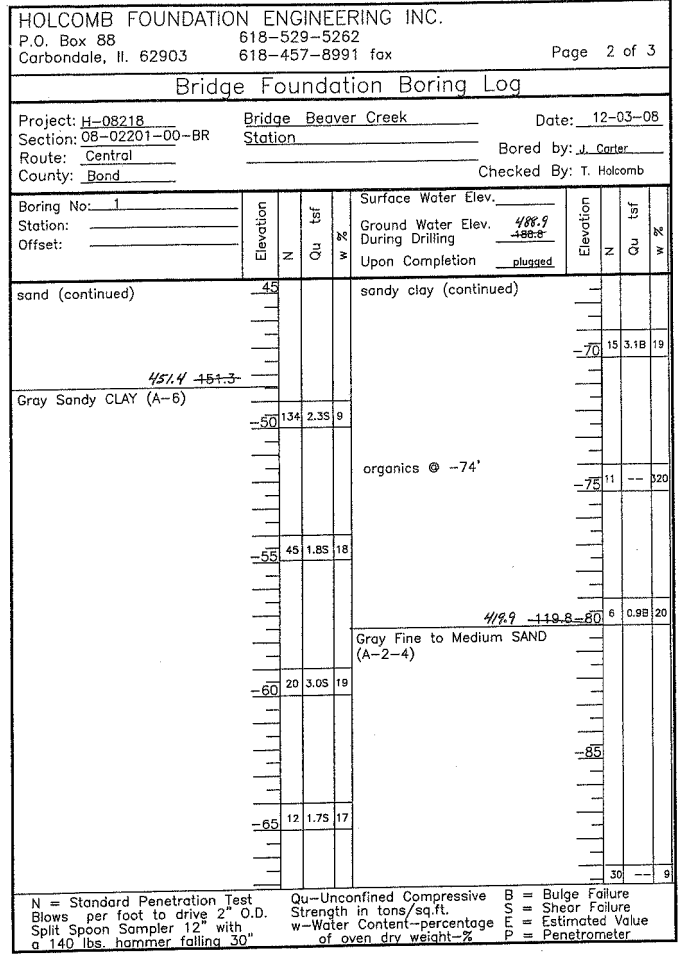
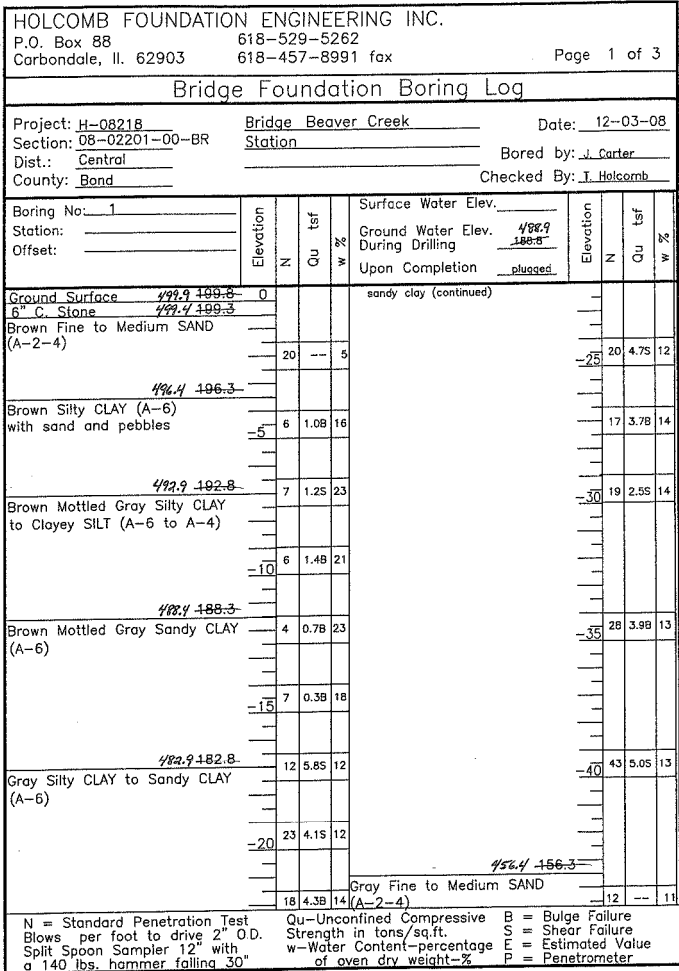
**SECTION B-B**

**REINFORCEMENT AT ABUTMENTS**

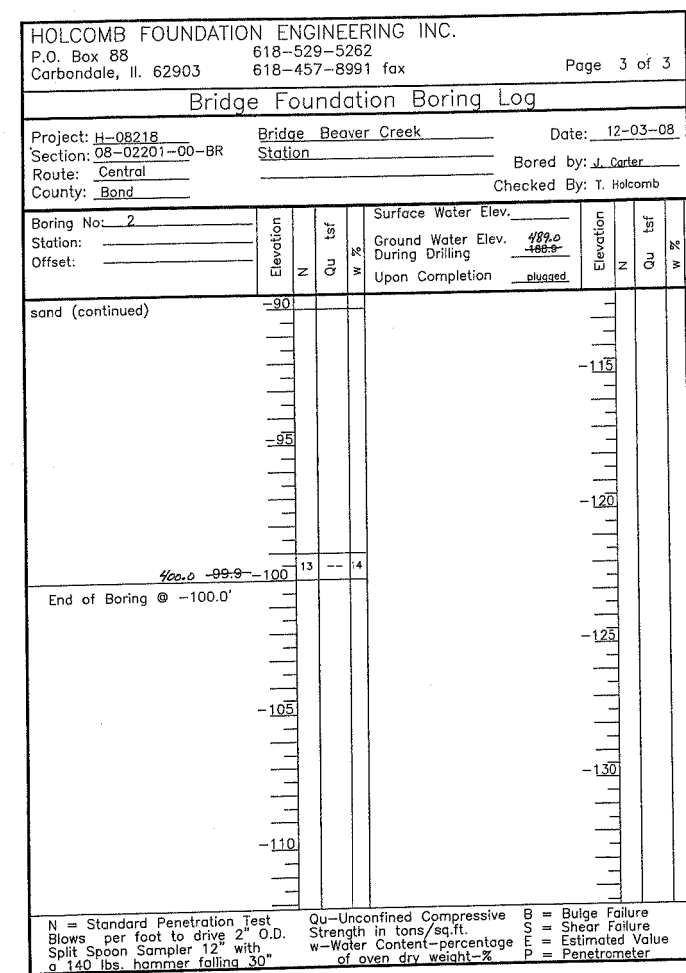
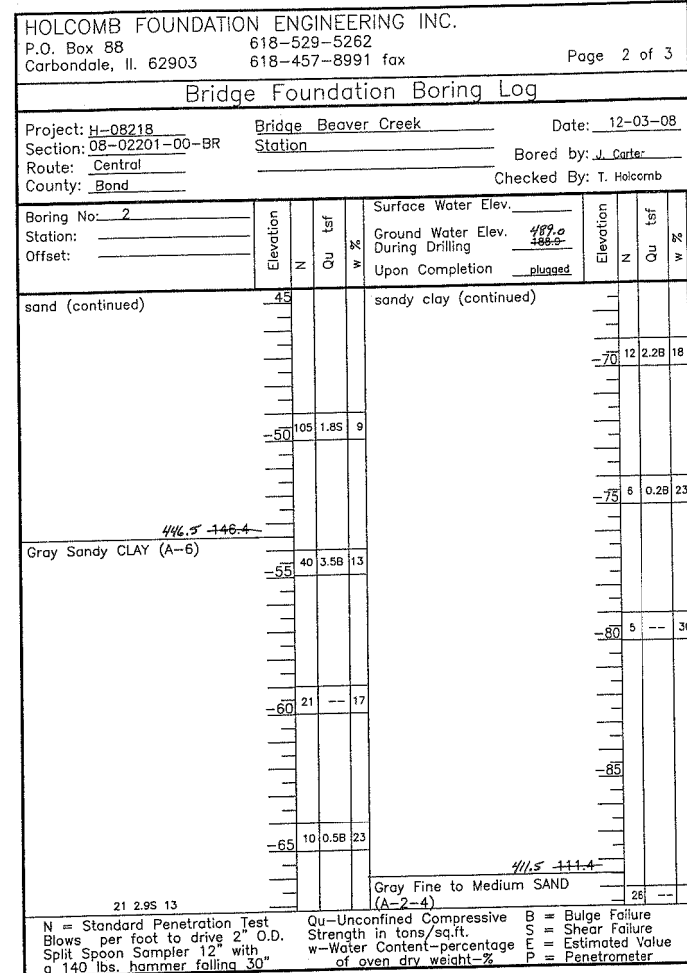
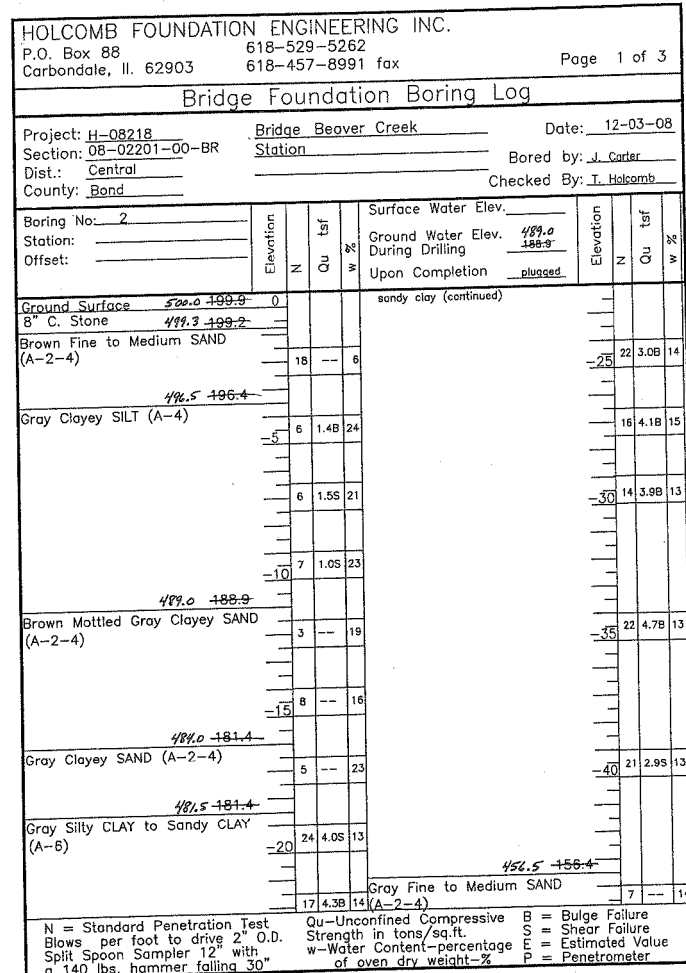
Note:  
 The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 8-11-2017

FILE NAME = H:\6184\CADD_Sheets\6184_Sht.29_Bridge.14_pile.dgn	DESIGNED - LDG	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>METAL SHELL PILE DETAILS STRUCTURE NO. 003-3223</b>	TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
USER NAME = k1aux	DRAWN - KHL	REVISED -			156	08-02201-00-BR	BOND	39	29	
HMG 9360 HOLY CROSS LANE BREESE, ILLINOIS 62230 Engineers + Surveyors (618) 526-9611	CHECKED - BGH	REVISED -			CONTRACT NO. 97697					
PLOT SCALE = 2.0000' / in.	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					
PLOT DATE = 3/15/2019			SCALE:	SHEET 14 OF 16 SHEETS	STA.	TO STA.				



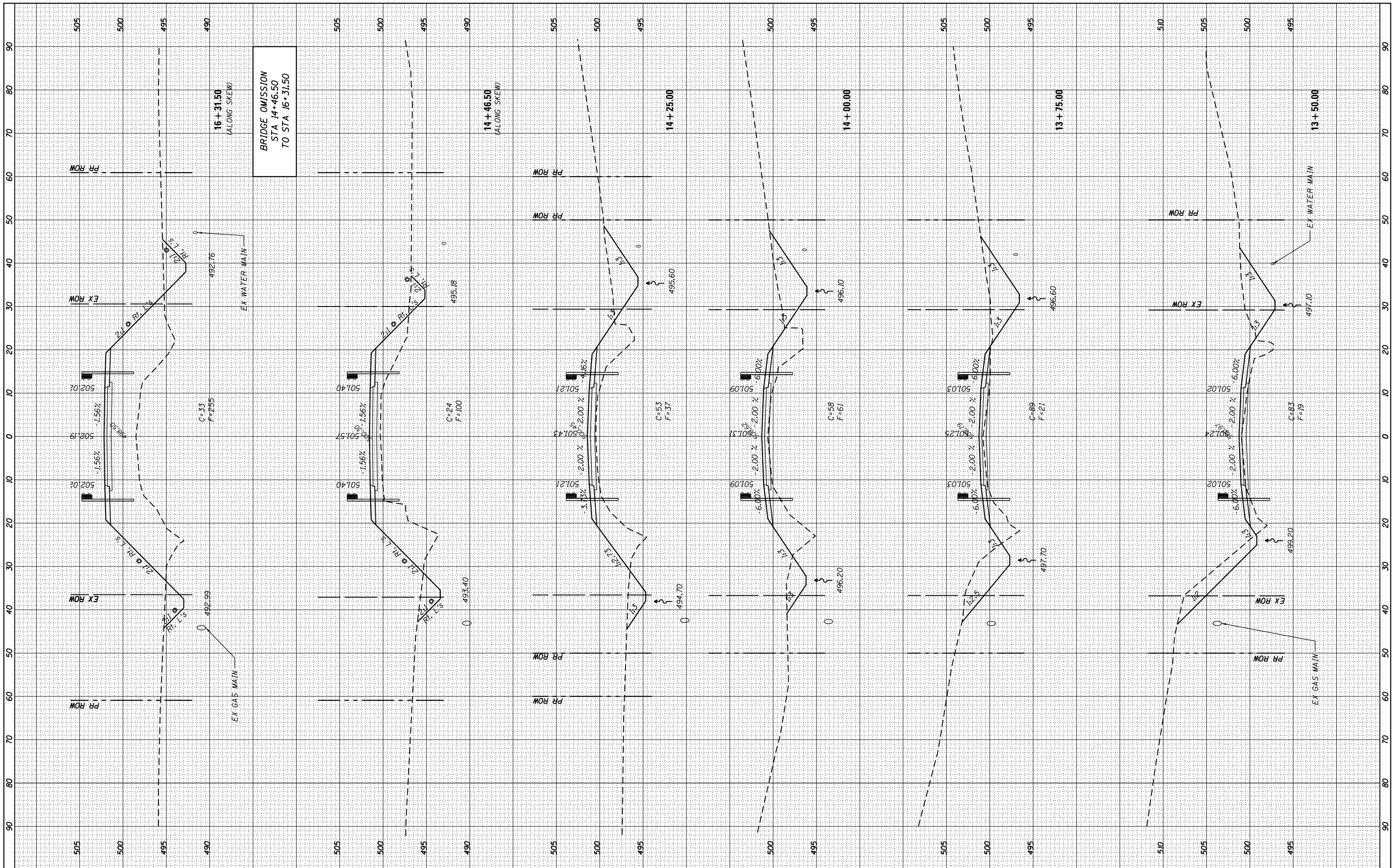






BY	DATE

BY	DATE



FILE NAME = H:\6184\CADD\_Sheets\6184\_Sht.32\_39\_XS.dgn

**HMG** ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611

USER NAME = kluax  
 PLOT SCALE = 20.0000' / in.  
 PLOT DATE = 3/15/2019

DESIGNED - LDG  
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 CHECKED -  
 DATE -

REVISED -  
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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

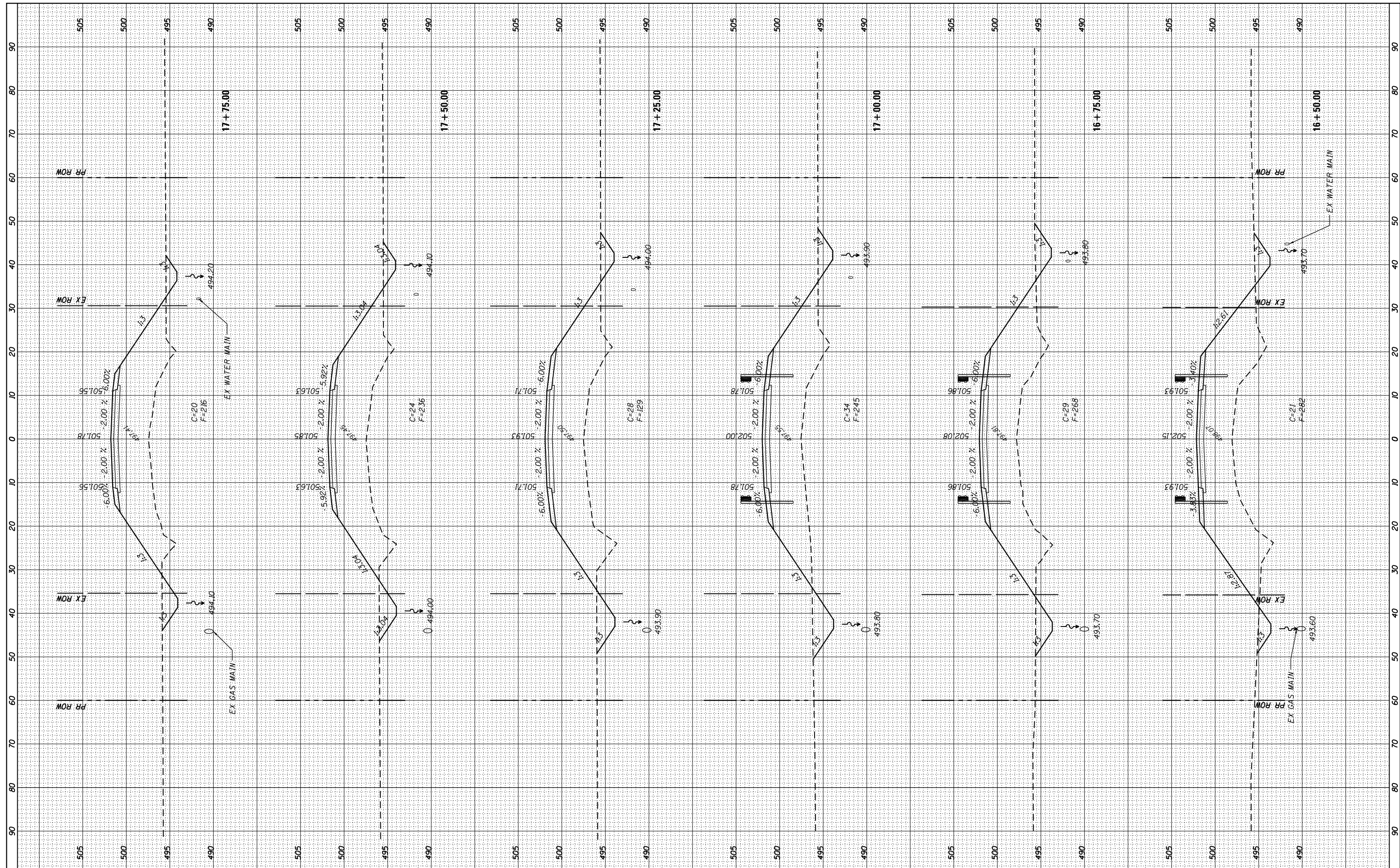
**CROSS SECTIONS  
 EXISTING AND PROPOSED ROADWAY**

SCALE: SHEET 2 OF 8 SHEETS STA 13+50.00 TO STA 16+31.50

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	33
CONTRACT NO. 97697			HMG JOB NO. 6184	

FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED
BY	DATE
NO.	

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED
BY	DATE
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**HMG** ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611

USER NAME = klauf  
 PLOT SCALE = 20.0000' / in.  
 PLOT DATE = 3/15/2019

DESIGNED - LDG  
 DRAWN - KHL  
 CHECKED -  
 DATE -

REVISED -  
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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

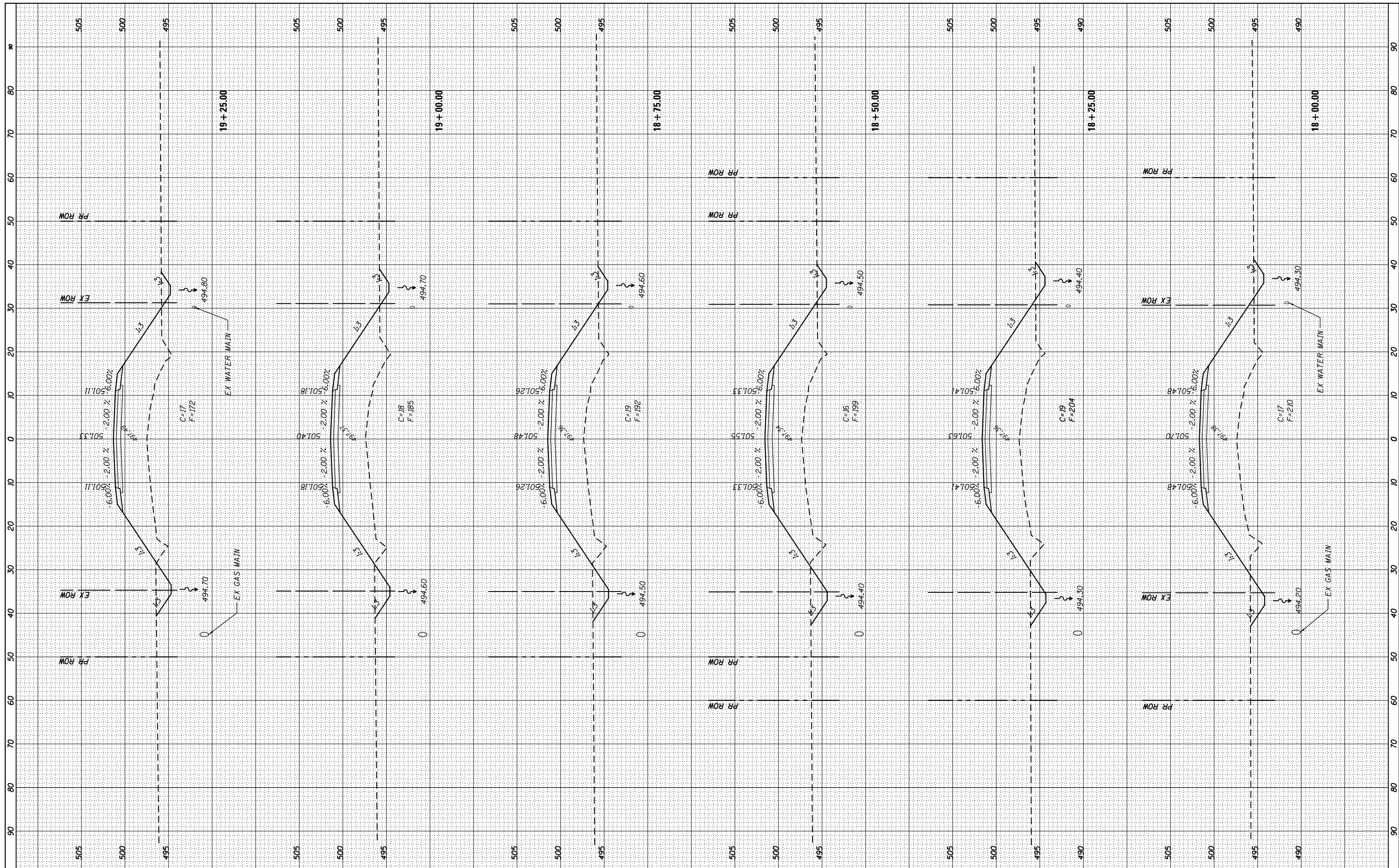
**CROSS SECTIONS  
 EXISTING AND PROPOSED ROADWAY**  
 SCALE: SHEET 3 OF 8 SHEETS STA 16+50.00 TO STA 17+75.00

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
RTE 156	08-02201-00-BR	BOND	39	34
CONTRACT NO. 97697			HMG JOB NO. 6184	



FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
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AREAS CHECKED	AREAS CHECKED		

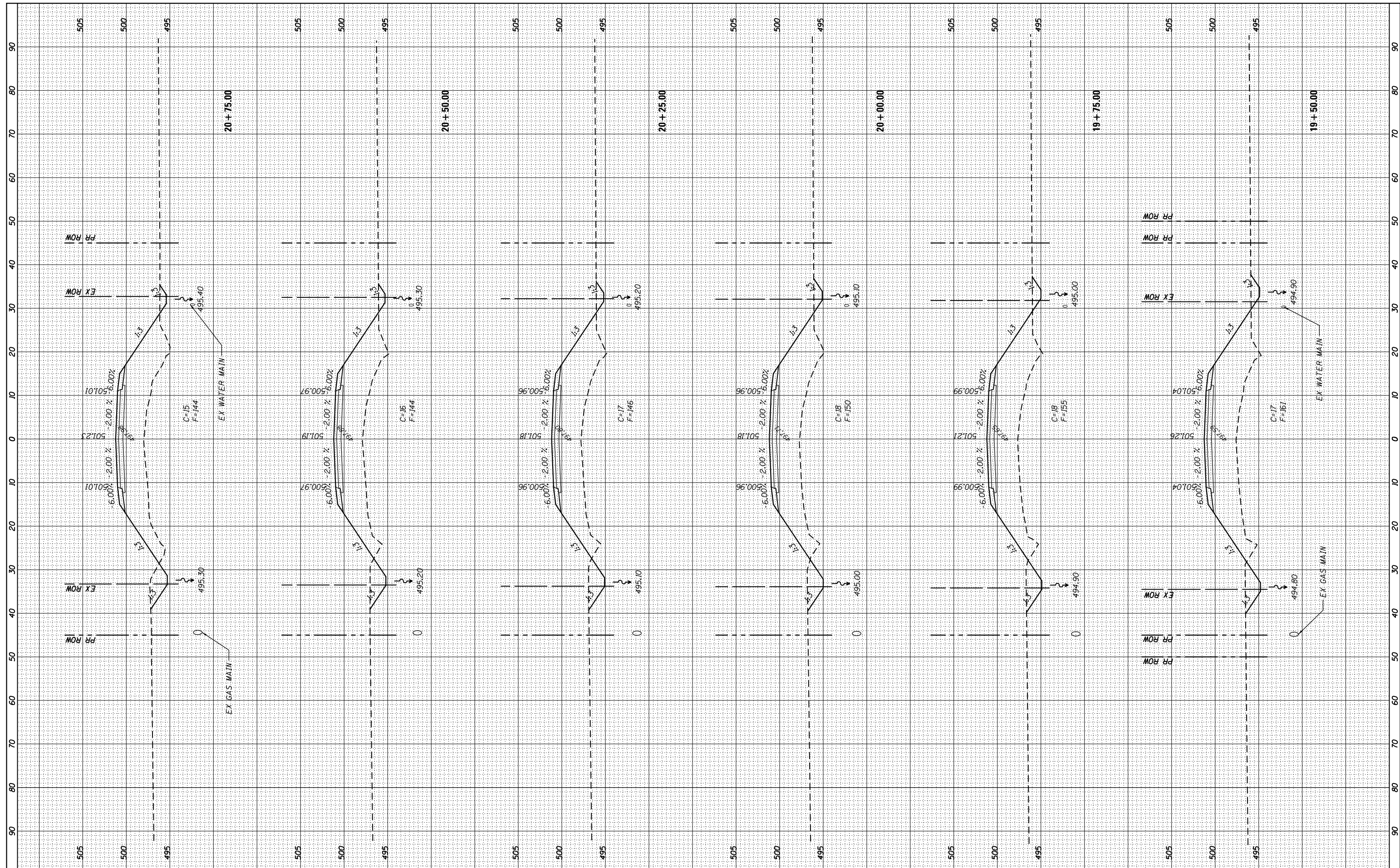
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PLOT SCALE = 20.0000' / in. PLOT DATE = 3/15/2019			STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION				CONTRACT NO. 97697
			SCALE: SHEET 4 OF 8 SHEETS STA 18+00.00 TO STA 19+25.00				HMG JOB NO. 6184

FINAL SURVEY	SURVEYED	BY	DATE
NO.	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
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	TEMPLATE		
	AREAS CHECKED		



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 HMG ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
 BREESE, ILLINOIS 62230  
 (618) 526-9611

USER NAME = klaux  
 PLOT SCALE = 20.0000' / in.  
 PLOT DATE = 3/15/2019

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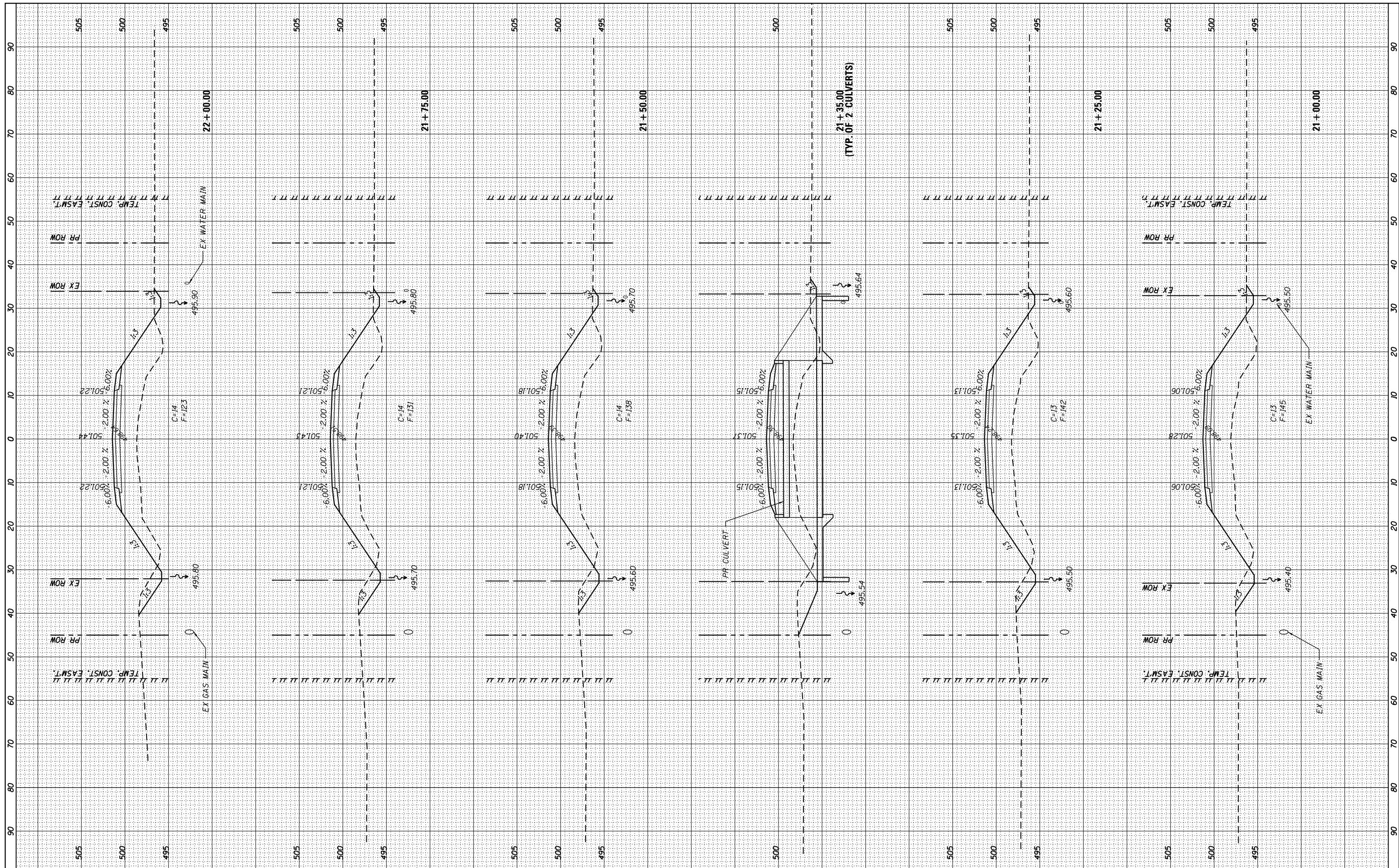
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS  
 EXISTING AND PROPOSED ROADWAY  
 SCALE: SHEET 5 OF 8 SHEETS STA 19+50.00 TO STA 20+75.00

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	36
CONTRACT NO. 97697			HMG JOB NO. 6184	

BY	DATE
FINIAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED

BY	DATE
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED



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**HMG** ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

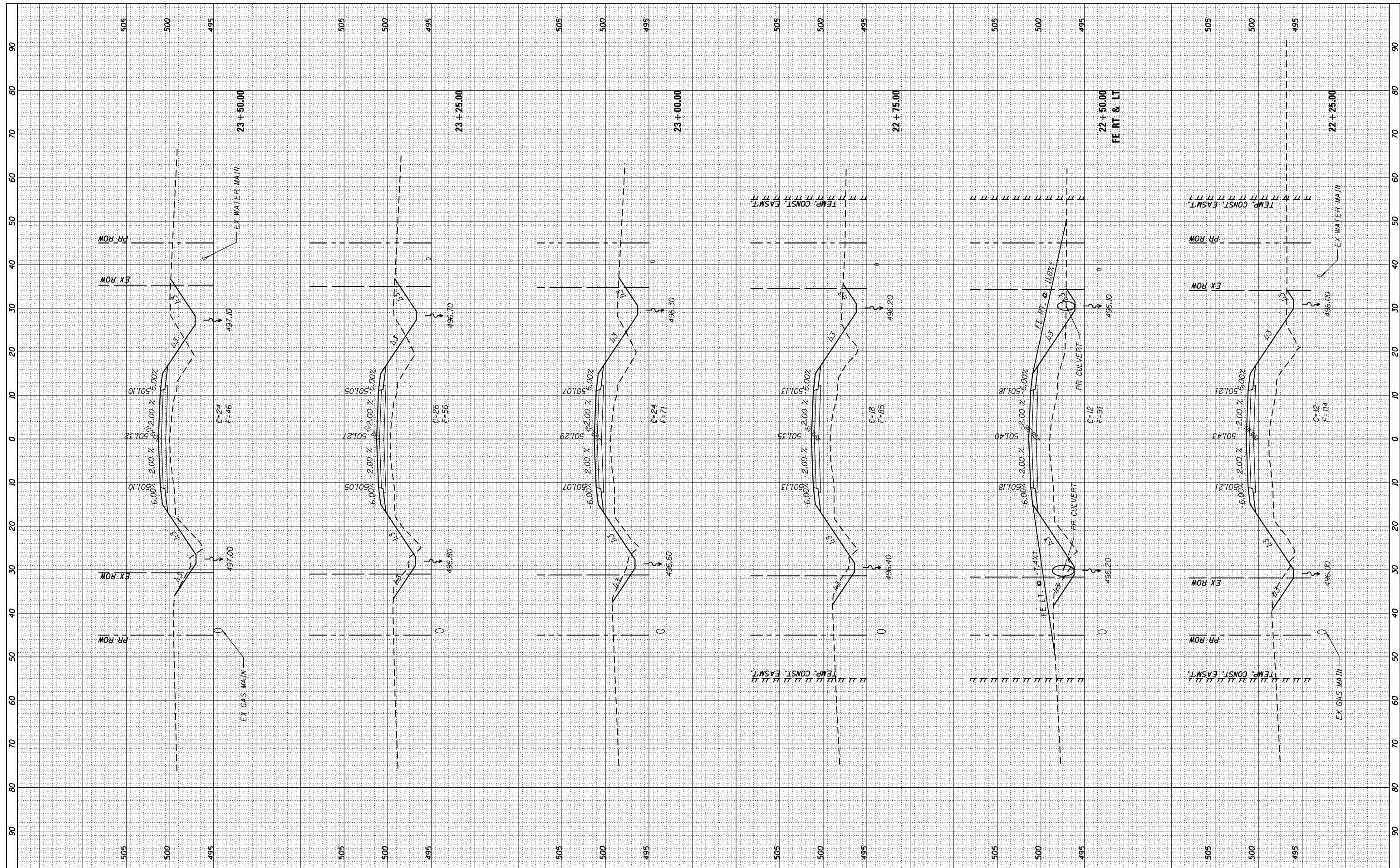
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**EXISTING AND PROPOSED ROADWAY**  
 SCALE: SHEET 6 OF 8 SHEETS STA 21+00.00 TO STA 22+00.00

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	37
CONTRACT NO. 97697				
HMG JOB NO. 6184				



FINAL SURVEY NO.	SURVEYED PLOTTED	BY	DATE
NOTE BOOK	TEMPLATE		
AREAS CHECKED	AREAS CHECKED		

ORIGINAL SURVEY NO.	SURVEYED PLOTTED	BY	DATE
NOTE BOOK	TEMPLATE		
AREAS CHECKED	AREAS CHECKED		



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 HMG ENGINEERS, INC.  
 9360 HOLY CROSS LANE  
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USER NAME = klaux  
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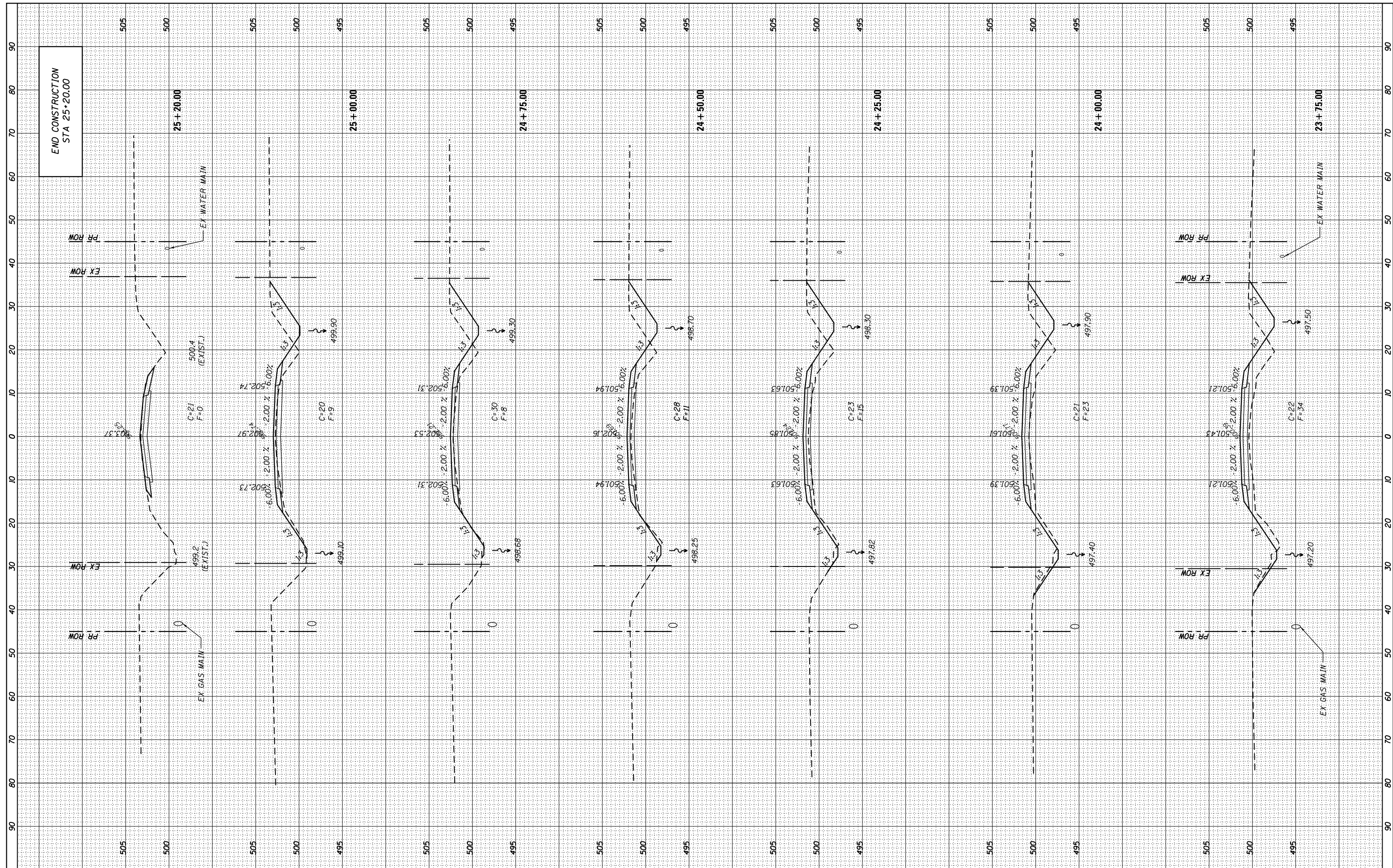
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS  
 EXISTING AND PROPOSED ROADWAY  
 SCALE: SHEET 7 OF 8 SHEETS STA 22+25.00 TO STA 23+50.00

TR RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	38
CONTRACT NO. 97697				HMG JOB NO. 6184

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BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED
BY	DATE



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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 EXISTING AND PROPOSED ROADWAY**  
 SCALE: SHEET 8 OF 8 SHEETS STA 23+75.00 TO STA 25+20.00

TR RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
156	08-02201-00-BR	BOND	39	39
CONTRACT NO. 97697				HMG JOB NO. 6184